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Address.

THE MODERN PHYSICIAN.

"Medicine will be thoroughly different from what we have called it heretofore."

THESE words, delivered from the lips of Lister, form my text for this evening.

MR. PRESIDENT, AND GENTLEMEN: Let me express my appreciation of the kindness by which I was asked to address you. I make this abrupt introduction advisedly, for I felt that should my humble voice, in this distinguished presence, find courage for no more than the opening sentence, I would withdraw with courtesy on my lips and grace in my heart. But, permitted to catch my second breath, let me say that I feel my personality lost in the grandeur of the cause I bespeak—the radiant grandeur of medicine's progress, in achieving which we trust the Medico-Chirurgical College will play an active part.

In the practice of some of the ancient universities of Continental Europe, it was the custom to award the medical graduate a ring, a barette, an open and a closed book. The ring betokened his solemn espousal to the medical profession; the barette signified his consecration as a priest to science; the open book represented the things already taught him; while the more significant closed volume was meant to typify that vaster and far more important stock of professional knowledge which it was still the purpose and business of his life to acquire.

While our colleges do not follow that ancient custom, still they award, with equal solemnity, to the safe-keeping of each of their graduates, a parchment certificate, entitling them to diagnose and treat the many ills that afflict the human race. In it is also embodied that book of unscanned knowledge which the faculty hopes her graduates will always keep before them, learning to unravel its contents. This is the knowledge we should covet most. It will not be ephemeral; but, born in the sanctuary of our own minds, it will dwell there, treasured in its most favorable habitat, ever in readiness, a guiding spirit in our professional lives. It is this knowledge, based upon the results of accurate observation and experimental research, which distinguishes that notable figure among men—the modern physician.

We are bewildered, as it were, when we reflect that true scientific medicine is a modern institution; that for ages men groped their way in the dark, without daring to dissect a human subject; that the most absurd ideas as to its mechanism and construction were entertained. The edicts of Galen held undisputed sway for ages, while the only mode recognized or known to the dignitaries of Rome to avert a pestilence, was in erecting a temple to Esculapius, or driving a nail in the Capitol. All the grandest discoveries have been the outgrowth of a few centuries, and this should be an incentive to push still further and penetrate still deeper into the recesses of nature, seeking her innermost haunts, and exposing to the broad light of day her most favored secrets. For nature is a beneficent mother; she sends us, not the thousand ills that torture

us; but, on the contrary, if we but listen to her mystic voice, we will learn that we ourselves are our persecutors; and for a safeguard she sends us medicine's youngest and most radiant offspring—hygiene, or the science of the prevention of disease.

The modern physician, therefore, has a higher duty to perform than the mere administration of a medicine, or, of some sweet, oblivious antidote. It devolves upon him, as a sanitarian and a benefactor of humanity, to prevent disease, and to instruct the people in the result of his observations. This fact has already been realized, and the establishment of Boards of Health and Sanitary Associations fully exhibits the interest of the people in the necessity of such institutions. For, with all the boasted knowledge of our age, when thousands can inform you in geology, the motions of the planets, the correllation of forces, can quote or read Virgil and Homer perfectly, there are but few who are actually acquainted with the simplest sanitary laws. In customs, habits, diet, dress, the dictates of nature are set at naught, hence, where health should exist, disease too often holds sway. This should not, ought not, be the case, and the only remedy lies in the diffusion of the proper knowledge among the masses.

The astonishing age in which we live should make the modern physician essentially a scientific man. His, is the study of man "fearfully and wonderfully made." He sees that disease is but a step from health, and but a step to the grave; so that unless his mind has quaffed deep draughts from the Pierian spring, his efforts may be set at naught. For to-day, science regenerates the world and elevates man above the pettiness of every day existence. The geologist, diving to the very depths of the earth, and studying the various strata composing it, has surely a grander idea of the formation of the world and of the eternal forces that have produced it, than ever philosopher of old. The physiologist, studying the wonders of the human form, sees more beauty in the body of man than the greatest of Grecian sculptors ever dreamed of. The chemist, subjecting matter to the test of the crucible, sees forms crystallized into being by the eternal chemistry of God. Spectrum analysis promises to reveal things as yet unrecognizable; while the anatomist and pathologist, microscope in hand, wait upon nature at her very fountain-head, and gaze, as it were, upon formative creation. Thus the names of Virchow, Pasteur, Koch, and Lister, stand out in bold relief among that noble army of investigators who have placed medicine upon a truly scientific basis. Hence, the distinguishing features of our modern medical institutions should be the excellence of their practical teaching in the way of exceptional clinical and laboratory advantages. For, the senses being so many God-given avenues of knowledge and perception, it follows that knowledge acquired by excercising the five senses at the same time, will be better assimilated and more lasting than a theory which has simply been heard in a didactic lecture.

Taking a firm stand for higher medical education, our college has strongly advocated a sound preliminary education, together with laboratory teaching; and, I must say, that the grateful appreciation of still course by the students encourages us to push this further our efforts in this direction, especially as regards the plain demonstration of the relation of micro-organisms to disease, or the Science of Bacteriology. The mine of precious knowledge covered by that name has but lately been discovered; it is the soul of hygiene, and its daily progress gives promise of great light upon hitherto unexplainable conditions of disease. To-day, most diseases are known to be due to micro-organisms, or germs which develop within us, producing disturbances, both mechanically and by the resorbtion of poisons incident to their growth. Thus, much has been learned on the nature of contagious and epidemic diseases, and later researches give promise of their successful prevention in the near future.

Surgery, under the guidance of antisepsis, has emerged from the lowest to the highest place in medicine, and her triumphs still continue.

Truly, we appreciate that the only "proper study of mankind is man," and that less attention is to be paid to mere abstractions, and, furthermore, that to the physician the possession of a solid education and sound common sense are more important than an illogical mind crammed full of technicalities.

Finally, the modern physician must recognize more than ever the power of woman's hand in the treatment and cure of disease. She is always welcome; in the halls of festivity as in the chamber of death; weak in body, but strong in soul; in the midnight vigil, in the silent fight for life—the doctor's second self. Trained in the art of nursing the sick, and possessing by nature special aptitude for works of mercy, her eyes often beam with a look of cheerfulness she cannot feel; and she throws a ray of gladness around the sufferer's couch, robbing disease of half its misery. It is a rare privilege to take part, however humble, in fostering that science whose only aim is to keep the rosy hues of health in every home, making life worth living. We, of the medical profession, are the active workers, but *you* (in whose hearts this sentiment should find a responsive echo, for disease has surely knocked at your doors, and pierced your hearts with a wound that knows no healing), it lies in your power to help us in attaining our end, by aiding our medical institutions in their efforts to give a practical and scientific education to their students.

Hence, your philanthropic disposition can find no nobler application than in the endowment of a laboratory or of a hospital ward, whence the fruits would spread for the relief of all your fellow-men.

When the laity becomes acquainted with our work, when they realize that, as science progresses, medical education must likewise acquire a higher standard; that this can be obtained only by hospital practice and laboratory work, then will they realize that it is in their power to increase these facilities by an endowment, and become, in the widest sense, benefactors of humanity: they will have fostered science by feeding the mind, and spread charity in health and comfort to their suffering brethren.

For, next to a man's right to breathe the pure air of

heaven, is a man's right to enjoy the blessings of health. To this end, the Almighty, having summed up, in man, the refinements of all creation, and breathed into this perfect mechanism a spirit like unto his, has entrusted its harmonious working and utmost preservation to us of the medieal profession. He that made us all, loves us all, both rich and poor. Hence the modern physician, being, above all, a humanitarian, must spare no endeavor to procure, as far as his influence may reach, for the poorer classes, the same comforts in treatment as heaven has blessed us with. Philanthropy and charity, therefore, "earth's link to heaven," should be his predominant characteristics, though he may often meet with the sore experience that

> "God and the doctor we alike adore,
> Only in danger, not before;
> The danger over, both alike are requited:
> God is forgotten, and the doctor is slighted."

Thus it is, gentlemen, and more especially those among you who are about to embark upon the practice of your profession, and whom I have the honor to address as alumni for the first time this evening, finding in you the type of the modern physician, I would see you rise, step by step, through this crowded and envious pathway to the top, where, according to Webster, there is plenty of room. Thus it will be; as you all take rank, you will remember the happy scenes of your first labors in medicine, your Alma Mater. I would see her famous by the borrowed fame of her alumni. I would see them banded firmly together, working ardently and constantly for the advancement of medical science, their own interests, and the continued welfare and prosperity of the parent college.

Original Articles.

ON THE VACCINAL PROPERTIES OF MICROBES, PREVIOUSLY PATHOGENIC, DEPRIVED OF VIRULENCE BY CULTIVATION.

By M. A. CHAUVEAU.
PARIS, FRANCE.

IT is not under this title that I intended to publish the experimental studies contained in this new work. It was undertaken for the purpose of learning the value of certain characteristic facts in elucidating the general natural history of micro-organisms, particularly with regard to specific transformation.

But it happens that, among the results of my researches, some appear that bear an important contribution to the great question of preventive inoculation. Energetic vaccinal properties have been discovered in a pathogenic microbe, not only attenuated in its virulence, but systematically deprived of all infectious aptitude, rendered so neutral and inactive that it was asked if the microbe thus transformed had not become a new species.

And then arose the question as to whether this was not a general fact. There are other pathogenic microbes that are easily deprived of all infectious property, or that even spontaneously throw it off in spite of all the care that may be taken to avoid it in a series of reproductions on the surface of cultivating media. Have these cultures, that suffer a loss of virulent aptitude, also vaccinal properties?[1]

Here is a question that merits to be brought forward, and to which, it occurred to me at the last moment, I ought to call attention, by the choice of the title of my paper. At the same time, I have not modified the context. If it presents any interest from the point of view of pathological physiology, that interest comes, as a natural corollary, from the facts that have been discovered in a study that aimed exclusively at an important point in the general history of organized beings. This point, therefore, will remain the principal objective of my work.

(*A*) *Can the Complete and Definite loss of all Virulence in Infectious Microbes be Considered an Index of Specific Transformation?*—We know the close relationship that exists between the *pathogenic microbes* and those that, by a legitimate extension, we can place together under the designation of *saprogenic microbes*. This relationship has, very naturally, given rise to the hypothesis that there is not between these two kinds of organisms any well-defined line of demarkation, and that they can transform themselves each into the other. We have even sought to bring about these transformations to render benign, that is, incapable of their natural virulent manifestations, certain eminently malign pathogenic microbes; and to render malign, that is to say, clearly virulent, certain saprogenous microbes, habitually incapable of all evil physiological influence when, instead of being cultivated in exterior media, they are implanted in the animal organism.

It is very certain that the virulence of certain pathogenic agents becomes attenuated or exalted according to the conditions of the cultures to which these agents are submitted. It even sometimes occurs that this virulence is wholly lost, at least in appearance, without sensibly diminishing the vegetability of the microbe. In truth, the recovery of wholly lost virulence does not seem to be so easily obtained; neither *a fortiori* does the thorough imparting of this property to microbes that are purely saprogenous originally.

But the success of the inverse operation is not lessened in its consequences. It gives us the right to inquire if we do specifically change the pathogenic microbes whose virulent power we completely destroy, while we preserve their power to vegetate.

In order to interpret the result, I chose, among the facts concerning transformation, of which it is possible to take a part, those that relate to *bacillus anthracis*. It is found everywhere in the laboratories where charbon receives much attention; in the cemetery office of Berlin, as well as at M. Pasteur's. It is even found without being sought. But the methodical application of the different processes of attenuating virulence enables us to reproduce facts with certain assurance. I shall describe those that I obtained while using air, or compressed oxygen, as the attenuating agent.

[1] *Arch. de Med. Exper.*—Tome I.

(*B*) "*Bacillus Anthracis*" *Rendered Neutral or Indifferent; that is to say, Deprived of All Virulent Power by Cultivation in the Presence of Oxygen Under Augmented Pressure.*—In 1884, I succeeded, while cultivating the agent of charbon during four and five successive generations, under augmented pressure of the air (nine atmospheres) in creating races of *bacillus anthracis*, of which the virulence was considerably attenuated. The attenuation of the virulence had been carried to such a point that the inoculation of the cultures in ordinary doses was, for the sheep, completely, or nearly completely, inoffensive, according to the degree of attenuation, while it continued constantly, or nearly constantly, to kill young and very frequently adult guinea-pigs.

These races of charbonous bacilli, propagated since that time in an irregularly enough manner, have arrived to-day at their twentieth or twenty-fifth generation. Their properties, that I described in my former communications were preserved almost intact, although no particular care was used to that end.[1]

I had always intended further to carry on the attenuation of these races of still virulent agents, by submitting them again in fresh cultures to the action of oxygen under augmented pressure. It was necessary to see if there could be obtained not only bacilli much attenuated, and thus rendered fit for vaccinal use, but also agents absolutely deprived of all virulence, fixed in their new properties in a manner to be considered as specifically transformed into purely saprogenous microbes. But circumstances did not permit me to commence my trial till December, 1887, and then, again, it was necessary to suspend my operations until the month of July, 1888. A happy misunderstanding, caused by my remoteness from the laboratory, where my researches were made, put me much sooner than I supposed possible into possession of the facts that I was seeking to establish. The new generations repeatedly submitted to the attenuating influence of oxygen. The new generations ought to have been produced in a reservoir where the pressure of the attenuating gas should have varied from two to two and one-half atmospheres. But, because of a misunderstanding by the assistant in the laboratory concerning the initial point of graduation of the manometer of the apparatus, the culture was made in oxygen gas, nearly pure, under a pressure of three to three and one-half atmospheres. Aside from a few failures in certain bouillons of a composition less favorable to the cultures, the latter were perfectly fertile in spite of this high pressure, which is certainly at the extreme limit compatible with the exercise of the power of proliferation.

[1] The contrary occurred. The attenuated races were very much neglected. For example, one of them was forgotten during six months in a thermostat at +32°, without any one's thinking of renewing it by a fresh sowing. The propagation of these races of charbonous bacilli has been carried on since the month of October until recently, either at the school at Alfort—thanks to the kindness of M. Nocard—or at Lyons, at the Veterinary School, and under the medical faculty by MM. Arloing and Rodet, I was able to exercise but a very irregular watchfulness, over the maintenance of these cultures.

Two races of attenuated virus adapted to preventive inoculation, were submitted in my new experiments to the repeated attenuating influence of compressed oxygen. One of these races is slightly less active than the other; the first will be designated by the letter A, the second by the letter B.

The virus A sustained the increased action of the oxygen under augmented pressure during three successive generations; the virus B during four generations, of which only the last three succeeded without interruption; the first and second were separated by the intervention of generations cultivated in the air at ordinary pressure.

From the first new generation in contact with compressed oxygen, the virus A had lost all virulence. It had acquired an absolute benignity, at least in appearance, in regard to the most susceptible subjects to charbon, such as young mice and guinea-pigs a day old. I add that this absolute benignity was wholly maintained in later cultures made in contact with air at normal pressure; cultures carried in the meantime to the fifth generation.

In the virus B this condition of indifference or inertia was not obtained till after the second new generation under augmented pressure of oxygen. But the change was as radical as in the virus A. Inoculations of liquid cultures had no more effect on young mice than on guinea pigs a day old, and the same results obtained when later cultures, made in free air, were used to inoculate test animals.

In these later cultures the power of proliferation or growth was not shown to have been simply lessened, at least in comparing it with that of microbes simply attenuated in its virulence for vaccinal purposes. We know, in fact, that this attenuated microbe tends to develop itself more slowly than the agent that possesses its full virulence. We know, also, that sporulation in those attenuated can affect certain peculiar characters. But it is always possible to remedy these few signs of degenerescence. So far as concerns my viruses, A and B, I have been able, in propagating them in appropriate bouillons very poor in nutritive matter, rapidly to obtain rich cultures abounding in spores, comparable by their morphological character and their apparent vigor to those that result from the proliferation of the most virulent *bacillus anthracis*. Concerning the conservation of vegetability, in the viruses A and B, little by right can pass as absolutely complete, and still they were entirely deprived of all virulent properties so far as regards the most sensitive species of animals to the action of charbonous virus.

I do not need to say that of the virus B equally with the virus A, the last two generations, in compressed oxygen, were not rendered more ineffective as to virulences than those that have just been mentioned; it was impossible. Did they sustain no other modification? This is what I studied at the moment, and of which I shall speak later. For the moment, I speak only of the loss of virulence making opposition to the perfect conservation of morphological characteristics and vegetability of the heretofore infectious agent. From this last point of view, it is always the same microbe; only it is no longer patho-

genous. It has become neutral or indifferent on the point of virulent aptitude, that is, improper to extra-organic fermentation of an infectious nature. It is a microbe that seems at present to be simply saprogenous, that is to say, able to live to develop itself at the expense of dead organic materials like the microbes of common fermentation.

What must be thought of it?

(*C*) *Does the Total Loss of Virulent Property Suffice to Rob "Bacillus Anthracis" of its Character of Infectious Microbe?*—It is very certain that the charbonous microbe is no longer virulent, in the sense that attaches to that word in general pathology. But there are other things, aside from the virulent property, that may designate the nature of infectious microbes. This infectious nature shows itself again, at least in the agents of certain maladies, by its vaccinal properties. When the organism has resisted their attacks, these agents leave behind them beneficial traces of their passage; they create immunity against their own malignant action. Those of which the virulence has been attenuated possess equally this property. Thus the attenuated virus that we have described, with little enough exactness, by the way, under the name of charbonous vaccines, reveal their infectious character by the immunity which they confer, exist as clearly as the truly virulent non-attenuated bacillus does, by the fatal disorders which its inoculation induces. The immunity acquired as a result of vaccination is the effect of an infection, which is distinguished only by its benignity from the infection caused by the microbe endowed with its full virulence.

Now, why should not charbonous bacilli, deprived of all virulence, possess the power to produce immunity as do those of which the virulence is simply attenuated? And, if they possess this precious property, is it not demonstrated that they are always closely united to their original stock; that they continue to deport themselves as ferments, capable of developing in organized media, and of influencing by their products such intra-organismal fermentation; that, in a word, these bacilli have in no way been deprived of their rôle of infectious agents?

(*D*) *The Infectious Character is Preserved to the "Bacillus Anthracis" Deprived of Virulence, by the Persistence of the Power to Impart Anti-Charbonous Immunity.*—The question at the end of the preceding paragraph will not long remain unanswered. I shall prove that the races of charbonous bacilli that I have changed by the sole repeated and prolonged action of compressed oxygen, into agents in appearance purely saprogenous, enjoy to a remarkable degree the precious property of imparting anti-charbonous immunity.

That has been the directing idea of the experiments in which I have sought to discover the proper conditions to demonstrate the vaccinal property of charbonous bacilli, deprived of all virulence. This idea is derived from the suggestion of the influence of the number of infectious microbes injected on the results of inoculation, a notion that I introduced in pathogenic microbiology in 1881.

The virus of gangrenous septicæmia, injected into veins of an ass, or a sheep, is a good example to take for the demonstration of this influence. The injection of a small quantity of virulent serum remains absolutely without effect. A stronger dose injected two or three times fails to kill most of the animals, but renders them sensibly sick and creates immunity. Finally, if one injects at once a very strong dose, the subjects are invariably killed by septic vibrio. These three cases may present themselves in the same manner in the use of strong anthrax virus, inoculated in greater or less quantity on sheep, naturally resistant to the action of the anthrax microbe, or with attenuated anthrax virus inoculated on sheep, endowed with a predisposition to contract anthrax. Thus, I have attenuated anthrax viruses, which, injected under the skin of the sheep, in weak doses (¼ of a drop), produce neither œdema, nor marked signs of general infection; but in stronger doses (2 drops) they are less inert, in the sense that they induce fever and vaccinate more or less thoroughly; finally, when ½, or 1 cubic centimeter is injected, it is not rare to see the animals succumb to anthrax.

Now, if attenuated anthrax virus acts in this manner, we are authorized to think that we shall be able to obtain something analogous to virus of which the attenuation has been pushed to a point that, in appearance, the virulence has been wholly destroyed. The gradual increase of the doses would probably never succeed, no matter how far it might be carried, in inducing deadly anthrax in sheep. But it is not too much to hope that such an increase, combined with repetitions of inoculations, would result in producing a vaccinal effect, that is, in creating immunity. Let us see what have been the results of experiments instituted under this idea.

These experiments were made with a culture of the virus (A), commencing on October 31, 1888. They were intended for altogether another purpose than the proof of this culture of the virus (A). This, by a mistake, was substituted for another. When I discovered this, I thought best to continue this experiment, commenced, so to speak, without my knowledge, with this virus (A). There was, besides, but one inconvenience in this, which was, that the quantity of virus that I could spare was insufficient to test it under the ideal conditions that I had in view. The results obtained were only the more significant.

First Experiment.[1]—Ten grade merinos were selected for this test.

On December 10, 1888, each received one drop of the culture (A) under the skin of the left thigh. On December 20, a second inoculation was made with two drops of the *same* culture. It was immediately after this second inoculation that the error concerning the culture used was discovered.

These first two inoculations, considering the extreme small quantity of the material employed, may be considered as absolutely neutral. Besides, they did not produce the slightest disturbance in the health of the subjects.

On December 28, it was therefore decided to make the first inoculation with a massive dose, still with

[1] This experiment was made at the Veterinary School of Lyon, with the assistance of M. Arloing.

the *same* culture A. Each sheep received one cubic centimeter under the skin of the right thigh. This time, the influence of the inoculation is manifest, and translates itself in each subject by a notable elevation of temperature, an elevation that requires about four days to reach its maximum, and as long to decrease and disappear.

Finally, on January 6, a second inoculation with a massive dose was made; but on nine subjects only, the tenth having been killed that very morning, probably in a fight with one of its fellows, who had, probably with his horn, disemboweled him.[1]

It was intended to inject two, and even three centimeters of this same culture A. Unfortunately, there remained scarcely enough to give each animal 1½ centimeters, a quantity which was injected under the skin of the left thigh. This new dose of the culture was without doubt insufficient to add much to the effect of the first, because the experiment subjects did not exhibit the least physiological trouble. The temperature was not changed. If the provision of the culture A had not been exhausted, a third massive inoculation would have been made. In default of material, it was decided to forego this third inoculation,[2] and it was decided to test the subjects by an inoculation with a strong virus. The nine sheep suffered this test inoculation with three new ones, operated on the same day, and a fourth control subject, but inoculated the next day, at night. In order to make sure of the virulent impregnation, two inoculations were given, simultaneously, the one in the left thigh, with a virus cultivated by M. Nocard, the other in the right thigh, with a virus cultivated by myself. A large drop was introduced under the skin of each thigh. The following are the results of the virulent inoculations:

Control sheep.—All four died of anthrax, in forty-five, sixty, seventy, and hundred and thirty hours.

Sheep Submitted to the Test of Culture A.—Two out of *nine* were killed by the virulent inoculations, one in seven hours, the other in one hundred and fifteen hours. *Seven* completely resist these inoculations.

Such is the result of the first experiment designed to ascertain the vaccinal properties of a culture of *Bacillus Anthracis* absolutely deprived of all virulence. In spite of certain defective conditions of the experiment—particularly the insufficiency of the quantity of the material employed in the second inoculation—the success fully responded to my expectation. The precautions taken to render the test inoculation particularly aggressive did not succeed in killing more than *two* out of *nine*, while *all* of the controls died of anthrax. I do not doubt that the resistance of the vaccinated would have been perfectly complete, if the test inoculation, instead of being double, had been single. And especially do I not fear to affirm, sustained by the experience that I have of the influence of the number of infectious agents, that this resistance would have left nothing to be desired, if we had been able to submit the subjects to the repeated action of a greater quantity of vaccinal material. But it is very different, as regards the end sought by this experiment, that the success, from the vaccination point of view, was more or less complete. The essential point was to learn if ultra attenuated races of anthrax bacilli possess vaccinal properties. Now, the fact is demonstrated in the most brilliant manner.

Second Experiment.[1]—Ten soliped animals—one she ass and nine horses or mares—were devoted to this experiment. These were animals destined to be slaughtered for the equerrissage or for the shambles. The greater part were still vigorous; but there were enough weak ones, presenting poor conditions of resistance.

A first inoculation of the culture A was made December 15, 1888. Two drops were injected under the skin of the ear.

A second inoculation of the ear was made December 22, with six or seven drops.

A third inoculation, on December 29, introduced under the skin of the neck of the subjects No. 1 and No. 2, *two* cubic centimeters of the culture, and only *one* cubic centimeter on the other eight subjects.

A fourth inoculation was made under the skin of the neck, of *one* cubic centimeter of the culture, on January 3, on the subjects 1, 2, 5, 6, 7, 9, 10, and on January 7, on the subjects 3, 4, 8.

Finally, a fifth and last inoculation of *three* cubic centimeters was made on all of the subjects on January 13.

The material employed in the five inoculations was always the same—culture A of October 31, 1888. It was made stronger for the fourth and fifth inoculations, in the same flask as the material that served in the experiment on the sheep, and, for the first three inoculations, in another flask.

The innocuity of these different inoculations was the most complete. There was *local accident*, so to speak. It was only after the fifth inoculation, with three cubic centimeters of material, that a sensitive œdematous tumefaction was observed; and, moreover, this very small tumefaction was very fugitive; it disappeared with great rapidity, as do those which succeed simple medicamental injections.

As to the general condition, it was very little modified. Neither of the inoculations acted very energetically upon this general condition. It is as much as ever, if they induced a few irregular changes in the temperature.

Test Inoculation.—Nine subjects suffered this test

[1] This subject had completely recovered from the first massive inoculation (see table of temperatures). The spleen, besides, was perfectly sound, and there did not exist a trace of bacilli either in the blood or at the level of the point of inoculation.

[2] I had at my disposition several other cultures endowed with similar properties. But I preferred to risk an insufficient saturation of the organism rather than to spoil the experiment by the use of several cultures, differing from the one in this experiment.

[1] This experiment was made at Mulen, with the coöperation of the Agricultural Society of Seine-sur-Marne and of the Society of Practical Veterinary Medicine, at the instance of M. Rossignol, Secretary-General of the two Societies, assisted by M. Barrier. I scarcely know how to thank these two societies, and particularly those of their members—I have just indicated them—who carried the experiment. Their assistance was particularly valuable to me under the bad conditions that I continued to find myself for pursuing my laboratory work.

inoculation at the same time with *two* control horses. There were only nine subjects tested by the inoculation of the strong virus, because the tenth, No. 1, ought to have been slaughtered on January 19. This animal was very old and much debilitated; it was a poor feeder. For a couple of weeks it was observed to be gradually failing. It ended by remaining in bed. It was killed. The autopsy demonstrated that there was not a single indication of anthrax infection.

The test inoculation was made on January 27, with a strong anthrax virus sent by M. Nocard.

The eleven subjects received one-half of a cubic centimeter of the virus under the skin of the neck on the right side, except that one of the controles received the virus on the left side.

RESULTS OF THE TEST INOCULATIONS.

1. On the Subjects Submitted to the Action of the Culture A.—As regards the local effect, the action of the virulent inoculation was about null. No tumefaction was observed except on one of the subjects, and the tumor, about as large as a turkey's egg, disappeared rapidly by resolution.

On Sunday, February 3, seven full days after the inoculation, I, myself, minutely examined each of the nine subjects. It was impossible for me to discover, in the inoculated region, the least trace of the operation, even in the subject which, at first, presented the tumefaction. On the she ass, however, a little attention ended in discovering, under the skin and adhering to its internal surface, a small, flat tumor, having the dimensions of a large lozenge.

The general health of the subjects was not further modified. A few, however, experienced an elevation of temperature, but which did not last.

2. On the Controle Subjects.—I examined these, like the preceding, on Sunday, February 3. Contrary to what happened to the latter, the inoculation induced considerable local affection, and tumefaction did not cease to extend up to that day.

In one of the subjects (No. 1) this tumefaction is of monstrous dimension, which deforms the animal. From the left side of the neck—its point of departure—it extended to the inferior border and the right side of the region, to the crest and trough of the neck and the breast. The infiltration slipped even between the thorax and the two shoulders, and showed itself behind the elbows at the girth.

The general condition is in accord with these grave local disorders. The subject habitually remains in a state of prostration. The pulse is at 80, and the temperature, which increased slowly, remains elevated. The animal is condemned to die of anthrax at short date.

In fact, the subject succumbed during the night of the 4th to the 5th. Its spleen was very rich in bacilli, that very rapidly killed a rabbit and two guinea-pigs, which were inoculated with the splenic pulp.

In the other subject (No. 2), at the moment of the examination—February 3—the local disorders show themselves much less pronounced, at the same time very grave, if not so menacing. In the inoculated region there exists a diffuse infiltration, which spreads under the skin in all directions, without producing a salient tumor. But, in accumulating in the declevous portions, the infiltration has produced an enormous tumor, in the region of the breast, a tumor which extends between the four legs. All of the right side of the neck and shoulder is sensitive to the touch.

The general condition is better than in No. 1. This animal has certainly greater chances of recovery. But as its temperature is always elevated, there is room for reserve on the prognosis.

This last experience, as may be seen, is still more demonstrative than the first. Success was complete—more complete than I expected, because, in this experience, also, it was necessary to economize with the liquid that was to be tested in regard to its vaccinal properties. The total dose inoculated under the skin was exceedingly small, in comparison with the enormous mass of the subjects that received it. But the inoculations were able to be repeated oftener than in the first experiment. To sum up: it is necessary that the vaccinal properties of the liquid be endowed with a certain activity, in order to be able, almost absolutely, to overcome the action of the strong virus, the effects of which were so intense and so grave on the controle subjects.

Conclusion.—The anthrax microbe, completely deprived, did not become a simple saprogenous microbe disposed only to produce those common fermentations which take place on the exterior of organized media. It preserved one of the most precious attributes which denotes the infectious nature of the pathogenic microbe. Therefore, it was not specifically transformed. This agent still belongs to the tribe from which it issues; it continues to be a pathogenic microbe. This is at least the conclusion that *actually* forces itself. Naturally, I can in no way decide as to what ultimate metamorphoses it will be possible to impose on bacillus anthracis in continuing to submit it to the action of compressed oxygen, or by any other means.

Still, this microbe was modified, and modified in a remarkable and interesting manner. Could we not already consider this first interference as a specific transformation, not of a pathogenic, into a saprogenic agent, but of an infectious microbe into another infectious microbe? The modified agent preserved its aptitude to produce, in the organism where it is sown, certain phenomena of general infection, since said agent can cause fever, and that it always confers immunity against the special malady caused by the pathogenic microbe from which it is derived. But the derived microbe is robbed of all aptitude to induce this special malady just as the agent of vaccine, which protects against small-pox, is robbed of the power to give to us the latter malady. Now, it is not doubtful that, if vaccine is derived from small-pox, it still constitutes a distinct nosological species, and that the two agents, still indeterminate in the two diseases, are specifically different. Why should it not be the same of our two bacilli—the one which protects against anthrax, and the one which gives it?

An elegant example of the working of this trans-

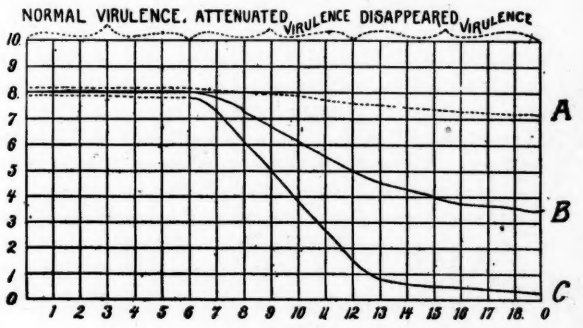
formation can be borrowed from the hypothesis that attributes the immunity after natural or induced infection, to the effects of a vaccinal infection, distinct from a virulent or infectious influence. Under this hypothesis, much caressed by M. Bouchard, these two influences would be exercised by two different products of the pathogenic microbe. I was, perhaps, the first to indicate the possible existence of a vaccinal substance, independent of the infecting poison. It is, therefore, easy to admit that the pathogenic microbes, in multiplying in the organism, or in cultivating bouillous, engender these two materials, now separately, now simultaneously, and in varying proportions, according to the conditions of the cultivating medium. In our actual case, the transformed agent would have lost the power to produce the infectious substance, while retaining nearly intact the power to engender the vaccinal material. This agent will still be a pathogenic microbe, since it will continue to create material which is the course of the rudimentary infection from which immunity results; but it will not be the same pathogenic agent as before, since it has lost the power to engender the infecting material to which the essential characteristics of the malady are due. In fact, in my experiments, the vaccinal property of the transformed bacillus anthracis is so active, and so well survives the loss of all infectious property, that we seem authorized to consider these two properties as being absolutely independent of each other, and as each belonging to a special product of microbic life.

This interpretation, seductive as it is, should, it seems to me, be abandoned. There is a grave objection to it. It is the objection drawn from the fact, already recently recalled, that it is possible to obtain, with certain pathogenic microbes possessing all their virulence, but inoculated in very small quantity, the same effects, benign from an infectious point of view, very active from a vaccinal point of view, as with the same microbe previously attenuated. It is easy to understand that these last, through the modifications which bring about the attenuation, should be rendered powerless to produce, in the organism, any infecting material, at least in notable quantity, while, at the same time, preserving its power to produce much vaccinal material; or that they should be led to produce infecting material of minimum activity, the vaccinal material remaining very active. But how admit that microbes possessing all their virulence comport themselves in such a manner when put, in very small quantity, in contact with the organism of a subject disposed to the evolution of the disease of which these microbes are the agents? Can we maintain that the small number of the virulent agents modifies their manner of being, physiologically, to the point of rendering them, in the animal organism, incapable, or very little capable, of producing virulent poison, while leaving them perfectly capable of producing vaccinal material?

Is it not more probable that there was only, in this case, a lessening of a sole and same pathogenic substance, the virulent property of which, by reason of the feeble accumulation of the substance, can no longer translate itself, by phenomena of mortal poisoning, while the vaccinal property continues to produce, in a certain measure, its habitual physiological phenomena? This vaccinal property, in fact, can act in all degrees; there are no limits, so to speak, to its minimum action; the virulent property, on the contrary, must be highly developed in order to produce death.

We can, therefore, in this case, explain the effects produced by the inoculation of the pathogenic microbe, without needing the intervention of a vaccinal substance distinct from the infectious material. Now, that which is plausible, for explaining the effects produced by minute quantities of sharply-virulent agents, can likewise be for explaining the effects which determine the agents whose virulence has been attenuated, or even completely disappeared. The two cases can be reunited, at least provisionally, in a sole and same interpretation.

To sum up: If I had to represent graphically the modifications forced on bacillus anthracis by the gradually-increasing attenuating action of compressed oxygen, I would trace three curves: 1. That of prolific aptitude. 2. That of vaccinal aptitude. 3. That of infectious aptitude: each curve being divided into three regions: 1. That of primitive or integral virulence. 2. That of attenuated virulence. 3. That of disappeared virulence.



This diagram, read from left to right, represents the progress of the weakening of the properties of bacillus anthracis, submitted to the attenuating action of compressed oxygen. Read from right to left it represents the march of the covery of these properties under the influence of revivifying culture.

O. Abscis on which is found the zero value of the different aptitudes of bacillus anthracis. A. Curve of prolific aptitude. B. Curve of vaccinal aptitude. C. Curve of infectious or virulent aptitude.

The curve of prolific aptitude, or that of vegetability (A), should be almost a straight horizontal. It should barely drop in the region of lessened virulence, and a little more in the region of disappeared virulence.

As a matter of fact, the prolific aptitude always retains a great value.

The curve of vaccinal aptitude (B), a horizontal line in the region of integral virulence, should continue in that of lessened virulence by a gradually descending line, the drop of which should diminish considerably in the region of disappeared virulence; this curve should remain noticeably elevated above the abscis, indicating the zero-value, of the aptitude that this curve represents as of the others. We have seen how effectively this vaccinal aptitude, while suffering a much more marked diminution than the pro-

lific aptitude, still preserves a notable value in cultures the most deprived of virulence.

Finally, the curve of infectious aptitude (C) should drop gradually in the region of attenuated virulence, in order to approach, in the region of disappeared virulence, very near to the line of the abscis representing the zero of the infectious aptitude, but without ever reaching this abscis. This curve of infectious aptitude is, therefore, asymptote. Which means, that disappeared virulence is not, properly speaking, a destroyed property, but a property so weakened that our experimental means cannot make it appear.

As is seen in the diagram, these three curves, exactly superposed in the region of primitive virulence, withdraw from each other more and more in receding from that region, because they approach unequally the zero line. I do not know, better than by the graphic indications of the diagram, how to express the results of my researches on the nature of the modifications forced on the pathogenic agents, which seem to have lost all virulence. The transformation suffered by these agents is only apparent. At the bottom, they have not even lost their virulent aptitude, of which they seem to be so completely deprived. This is what I shall prove in demonstrating that virulence can be fully restored to anthrax bacilli from which it had been taken.

[To be continued.]

Society Notes.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, March 27, 1890.

EGBERT H. GRANDIN, Chairman; IRWIN H. HANCE, Secretary.

DR. EDEBOHLS showed a cancerous uterus which was removed by combined abdominal and vaginal operation; also presented a second specimen of an amputated cervix, where the clinical features of the case were those of cancer, but no traces of carcinoma could be detected with the microscope. Result was a perfect cure.

DR. JEWETT presented a specimen of biliary calculus with concretions, about the size of a walnut. Patient who passed it was sixty years of age, and had had several attacks of biliary colic. Laparatomy was indicated because of intestinal obstruction, was refused, and the doctor then resorted to massage with a satisfactory result.

THE CHAIRMAN stated that the first case was plainly unsuitable for operation because of the extent of the disease. It was just the case for amputation and curetting and cauterization, after Byrne's method; the disease will probably return quickly, and this usually spreads more rapidly.

DR. FRUITNIGHT showed a supernumerary thumb, which was attached by a broad pedicle, and had bled freely during its removal.

DR. A. F. CURRIER then read a paper entitled:

A CASE OF UTERUS BICORNIS UNICOLLIS, WITH PARENCHYMATOUS ABSCESSES OF THE PORTIO-VAGINALIS.

The patient was first seen August 15, 1889. Twenty-five years of age; married eight years; had had five children in rapid succession; no miscarriages; three breech presentations. Menstruated first at fourteen; normal in amount; always regular.

By examination a relaxed condition of the vulva and vagina is found; vaginal portion of the cervix is very large; cervix is fissured and indurated. Uterine body is retroflexed and adherent. There are, also, fissure of the anus, and large external hemorrhoids.

August 21, Emmet's operation was done on the cervix. In removing the wedge of tissue from the left side of the cervix a parenchymatous abscess, containing about a teaspoonful of pus, was opened. The tissue of the cervix was of the most intense hardness I have ever seen; the cavity was curetted, but the operation wound did not heal well.

Second operation was done in September; another small abscess was opened, and the intense induration had disappeared, and the wound healed kindly.

A month later an operation was done for the purpose of releasing the retro-flexed and adherent uterus. The adhesions were readily separated, and the right ovary and tube were removed, the former being much enlarged. The relation of the parts seemed somewhat unusual, and I found that I was dealing with a bicornate uterus. The two structures were symmetrical with each other, pear-shaped, about two and a half inches in length from the top of the fundus to the bottom of the sulcus, which separated them, each was in all respects like any normal, well-developed uterine body, except that the inner side of each was perfectly smooth, and without projection or appendage of any kind. The round ligament proceeded in a normal manner from the outer side of each organ, and these were shortened, according to Wylie's method. Patient's recovery was good. Her health is better than it has been for a long time, and a probe is easily passed into the two uterine cavities from the single cervical opening.

I desire to specially call attention, first, to the changes which took place in the uterine tissue after the first operation. Second, to the existence of abscesses within the muscular structure of the uterus. Third, to the very great rarity of the condition, which, according to Kussmaul's classification, is known as uterus bicornis unicollis.

The left horn, which was retroflexed and adherent to the pelvis, was nearly centrally located, and the easy passage of a probe into its cavity, before the operation, disarmed all suspicion of the condition of affairs. The normal condition of its tube and ovary also suggested that this was the portion of the organ in which gestation had been accomplished. The presence of the other horn, more or less enlarged during pregnancy, may have accounted for the breech presentations in the last three labors.

Discussion.—DR. MURRAY had seen glandular abscesses alone in non-parous cervix, and suggested that in this case it might have been due to a thrombus.

DR. BOLDT had never seen an abscess in the cervix.

DR. DUDLEY had seen several cases of double uterus, two like Dr. Currier's case, with impregnation of one horn. Considered the abscesses probably due to glandular disease. Displacements were likely to return when operation was solely on round ligaments.

DR. GOLDTHWAITE thought a taking-in of the broad ligament was better than any quilting of the round.

DR. GOELET had met with three or four instances of these abscesses. Had had a case of double uterus and vagina, where he dissected out the vaginal septum, which was a mistake, as the woman might more readily become impregnated in both uteri.

DR. EDEBOHLS had only seen abscesses of the cervix in pre-antiseptic times.

DR. J. VAN DER POEL reported a case of parturition with double uterus and vagina; woman was delivered at the Sloane Maternity.

DR. CURRIER stated that there could be no mistake, that this was not a glandular abscess.

Then DR. MURRAY presented a paper with the title of:

THE CÆSAREAN SECTION IN MODERATELY CONTRACTED PELVES.

The results of older operators before the antiseptic period are misleading, and only very modern statistics are to be relied upon. Further, the conditions surrounding each case vary, and any operation would fail; this should not prejudice our judgment. It is all important, therefore, that the conditions and the procedures obtaining success or failure should be carefully analyzed, that we may have clearly before us the resources of our art, and also the limitations of these resources, if success is to be assured. I wish to report to-night a case of Cæsarean section, and one of craniotomy, both successful.

Cæsarean Section.—February 1, 1890. On arriving at Maternity Hospital, Blackwell's Island, at 11 30 P. M., I found Mrs. Mary M—— in labor; aet. twenty-five years; N. S., II para. Patient short—fifty-six and one-half inches high; very small in figure, but regular. First menses at nineteen years; regular; no miscarriages; last menstruation, May 1, 1889; quickened, July 18, 1889. Mother died of phthisis. Personal history remarkably good. First labor in 1886; delivered of small living child, which died in one year; was in labor eight days. Subsequent to this had severe attack of rheumatism.

Physical examination: lungs and heart, normal. Pelvis measurements: between spines of ilium, 8½ inches; between crests of ilium, 10 inches; D B. ext. conjugate, 6 inches; conjugata int., 3⅝ inches; transversely contracted.

Labor commenced January 30, at 9 P. M. Pains slight; not efficient. January 31, 1 A. M., os the size of a silver quarter; os externum hard and undilatable. Chloral administered; afforded patient rest; had no effect on cervix. Hot douches and quinine now given, and later Barnes's bags, Nos. 1 and 2, were employed, and cervix was dilated one-half. Patient much exhausted. Magendie, ♏x hypodermically. Nourishment given.

February 1. Same condition up to 9.15 P. M., when waters came away and left arm and hand prolapsed; hand appearing at the vulva. On admission to delivery-room, child very movable; head above superior strait; not engaged. On January 30, 9 P. M., head was in right iliac fossa; breech in left. January 31. Vertex felt over superior strait; not engaged.

February 1, 9.15 P. M. Presentation transverse; head to left, breech to right; left arm prolapse, left hand at vulva; dorso anterior. Fœtal heart, 142, one inch to right of median line, and three inches below umbilicus. On my examination, I found the same position of the fœtus; in addition, the uterus was firmly contracted; prolapsed arm was cyanosed; parts hot; pains frequent and agonizing. Rapid digital examination showed contraction transversely. I made the conjugate three and five-eighths inches, which would give about three and three-eighths for the vera; cervix was œdematous, and tightly constricted the prolapsed arm. Condition of parturient, poor. Pulse wiry and 128, showed the signs of her suffering. Abdomen and uterus extremely tender. Fœtal heart 145, and weak. Drs. H. C. Coe and E. H. Grandin, called in consultation, agreed with me as to measurements, and also that any attempt at version, with probably perforation and craniotomy, would be very hazardous, and the patient's best interests would be subserved by performing Cæsarean section. Patient consented, desiring to have a living child.

Operation: Instruments, assistants, and nurses, made thoroughly aseptic. Woman prepared as for laparotomy; antiseptically cleaned; urine drawn off.

At 1.32 A. M., February 2, abdominal incision made, six inches long; peritoneum opened; incision enlarged to nine inches. Uterus lifted out of abdomen. Rubber ligature passed around cervix, to be tightened at the moment of incising uterus. This, unfortunately, broke, and compression by the hands had to be resorted to; some bleeding before another tube could be placed in position. Uterus incised from near fundus almost to neck. Child lifted out by the feet; tubing controlled the uterine contractions, and head was easily and rapidly delivered. Membranes and placenta detached; cavity of uterus thoroughly sponged with weak bichloride sol. 1–4000. Time from abdominal incision to removal of child, twelve minutes; from exposure of uterus, three. Ergot administered hypodermically; uterus compressed by assistant. Twenty interrupted deep sutures of carbolized twisted silk, No. 2, passed through all the tissues except the decidua, and the incision thoroughly approximated. Twenty five chromatized catgut sutures were inserted in the peritoneum, completely occluding and covering over the line of the deep sutures. Elastic pressure removed; no bleeding. Abdomen irrigated with boiled hot water, which stimulated the patient. External wound closed. Antiseptic dressing applied. Uterus was now douched with solution of carbolic acid, and antiseptic pad placed over vulva. Delay in operation caused by breaking of elastic ligature and the irrigation of abdomen for the purpose of stimulation. Time, seventy-three minutes. Condition of patient, fair; pulse, 140 (still small and rapid); respiration, 32.

During operation, stimulants administered hypodermically. Afterwards, an enema of 4 per cent. saline solution, ℥iv, with brandy, ℥ss, was given. Nourishment and stimulation continued throughout the day, by rectum. Six P. M. Temperature, 100°; respiration, 36; pulse, 118. Complicating bronchitis caused distress, vomiting after coughing, and tympanites; the latter was relieved by enema, soap and water, and turpentine. At midnight, cough very troublesome, and patient restless. Magendie, ♏viij, by hypodermic.

February 4. Bowels opened by seidlitz powder again this morning; abdomen softer; lochia scanty, light red; no fetor. Some milk in breasts.

February 8. Little superficial suppuration around some of the stitches; in upper half, small granulating surface. Uterus well retracted, in ten days was almost to brim of pelvis; after this, involution was slow; sutures removed from abdomen on eighth day. Patient was transferred to convalescent ward on twentieth day, and was up in four weeks.

Child: Slightly cyanosed at time of extraction, but was resuscitated in three minutes; sex male; weight 8 lbs. 12 oz. There is a congenital inguinal hernia on right side, and, at the present time, he is thoroughly healthy.

Examination of mother, a few days ago, shows uterus well contracted, no tenderness around it, abdominal wall sound.

Diameters of child's head at birth:—Oc. ment 5¼, bi-temp. 3¼, cerv. breg. 4″, oc. frt. 4⅜, bi-pariet. 4¼, front. ment 3¼, sub-oc. breg. 4″, bi-mast. 3⅜.

I will now call your attention to a case in which I performed craniotomy with great difficulty, after version and ineffectual attempts at extraction, where I should have done a Cæsarean section, if the child had not seemed too small.

Bridget B., æt. twenty-two, II para, small stature, compactly built. First menses nineteen years; no miscarriages. Last menses, April. Quickening, September. Measurements of pelvis: Sp. il. 8½″, cr. il. 10″, d. b. 6¼, cong. diam. 3¼.

Patient had a small child three years ago, stillborn, labor long. There is no history of osseous trouble.

Labor pains began at 12.15 P.M., Feb. 8, 1890. At 1 A.M., Feb. 9, os dilated to size of a quarter. At 11.30 A.M., os dilating slowly, pains inefficient, though very painful. Head above superior strait, and very movable. At 3.30 P. M. I found os one-half dilated, head above the brim, movable, occiput to the left. Conjugate was made out to be about 3¼″, transverse about 4″. Patient was exhausted, restless, abdomen tender. During examination, membranes were ruptured; I attempted version by Braxton-Hick's method, but failed, because the uterus compressed the child so quickly. I decided to bring down a foot, so as to control the labor. The patient's condition was so bad that I decided, in her interests, to deliver at once; bringing down the other foot, I extracted slowly, pressure being made on fundus. The arms caught on the brim, and were with great difficulty liberated. Head became impacted at the brim, the occiput being to the left, chin to the right; all efforts to flex the head by pushing up occiput, or pulling down the chin, or by pressure from above, were futile. The blades of the forceps could not be passed alongside of the head, so I resorted to perforation. I perforated first in the occiput with Thomas' perforator, entering it at the highest point I could reach, the second cervical vertebra, and carried it into the skull; considerable brain matter was washed away, but no sensible diminution in the size of the head was apparent, and I still could not flex it. I then pulled down the lower maxilla, perforated through the roof of the mouth, washed out the brain, and introduced a crotchet inside, fixed it in the left orbit, applied the guard outside, and, locking the instrument, was able, by steady traction, to flex the head and deliver.

Time of operation, 25 minutes.

Child: Male, weight 6 lbs. 6 oz., without the brain.

Measurements: Bi-temp. 3¼, oc. front. 4½, sub-occ. breg. 4″, bi-pariet. 4″, oc. ment 5¼, bi-mastoid 3¼, fronto-ment, 3⅞.

Uterus and vagina, douched. Good convalescence.

In looking at these cases, if the abnormal measurements had been noted on their admission to the hospital, premature labor might have been induced one month before term, thereby obviating the necessary severer operations. In these two cases we certainly had to do with flattened pelves, with narrow transverse diameters. The pelvic outlets were not contracted. It is well in such cases to introduce the whole hand, patient being anæsthetized, to determine the transverse diameter, the general contour, and also the existence of exostoses; you can only then decide which is the operation to be done. The size of the child's head must also be considered.

In over twenty ovariotomies, most of them on the after-coming head, I have had no maternal mortality. The statistics of craniotomies come mostly from hospitals, where are the men of most experience, and thorough antisepsis is carried out. Cæsarean section, on the other hand, is done under unfavorable circumstances, and by men who have had little experience in abdominal surgery, which, in a measure, accounts for the bad results.

After a thorough consideration of all the various statistics of Cæsarean section and craniotomies, the deduction is drawn, that with a moderately contracted pelvis of the flattened variety, or of the funnel-shaped male pelvis, where the child is living, with strong, vigorous pulse, and the patient not exhausted by prolonged labor, sepsis, or ineffectual efforts at delivery, and the child of normal or above the average size, the relative indication may be followed, after proper explanation to the parents, and the Cæsarean section performed. The near future will probably see an improvement in the mortality of the mothers.

Discussion.—Dr. Jewett thought the difference between the figures of this country and Germany was due to efforts which were made to deliver the child alive or intact; the general practitioner should know how to mensurate. With an external conjugate below seven inches, you will certainly find some contraction. In the first case, the mother decided wisely in selecting the Cæsarean section.

Dr. Van der Poel stated that he had found

some difficulty in applying forceps to the after-coming head.

DR. GOLDTHWAITE: The time is coming when Cæsarean section will be almost as common as abdominal section is to-day. He believes in the principle of the Catholic to save the child's life.

DR. DUDLEY: The mortality of the children in moderately contracted pelves rests with the surgeon, who often delays too long, feeling that he can deliver by version. He had a case where the condition was discovered at the fifth month. The large incision can be done away with by delivering the uterus at the same time as the child. The future success of the Cæsarean section rests on the treatment of the uterine wound; one must secure primary union.

DR. BOLDT did not see the necessity for avoiding the decidua vera, if everything was thoroughly aseptic.

DR. CURRIER: With pelvic contractions one cannot always know, whether the woman will not deliver herself. If the child is living, craniotomy is seldom called for.

DR. COLLYER called attention to the size of the child, as a factor in the decision.

The Chairman stated that we must condemn Cæsarean section, if the general question of a choice is decided by statistics. These are the work of the past, and in the future there will be a change; the mortality ought not to be higher than laparotomy for pyo-salpinx.

The mother has a perfect right to live, but the physician has some rights, too. How much longer shall we be called upon to do murder?

DR. MURRAY, in closing, stated that the children in this country were heavier than in Germany, which would affect the statistics favorably. He had never but once experienced any difficulty in applying the forceps to after-coming head.

The Polyclinic.

PHILADELPHIA HOSPITAL.

PUERPERAL CONVALESCENCE.

THE subject of my talk this morning is puerperal convalescence. Convalescence, from its etiology, means getting strong. A woman, after her labor, is invalid—that is, not strong—and her convalescence makes her valid. Considering the change in the puerperal woman, one of the points is a slowing of the pulse-beat—70 or 75 per minute. During labor, it runs up to 100–190, but after labor it may fall as low as 34–40. Some authors say that this slowing of the pulse is due to fat thrombi in the circulation from involution. Even after miscarriage the pulse becomes slow, so it cannot be due to this cause.

Others claim it to be due to a scanty amount of food and rest, both mental and physical; but this is not the reason or explanation. Increased vital capacity has been assigned as the cause; but I do not think that any of these causes are right. There is an exaltation of force, and it is followed by a depression after labor. After labor, the uterus weighs 2.75 pounds, and in one week's time weighs one pound. Shortly after labor, most women have a chill, due to exposure, wetting, and hemorrhage; but it is of slight significance. As a rule, there are after-pains, especially in multipara. These pains testify to the contractions that are going on. They can be relieved by chloral, digitalis, or small doses of opium; but these drugs impair the pains. The latter should not be looked on as enemies, but as friends in disguise.

There is a flow, known as the lochia, which continues from ten to twelve days, and in all amounts to about sixty-eight fluid ounces in a woman who does not nurse her child; in a woman who does nurse her child it amounts to about thirty-eight fluid ounces. It has no odor, and during the first few days it is called a bloody flow, or lochia; in three days it is sero-sanguineous: in three days more it is muco-purulent, or lacteal lochia, and diminishes till the twentieth day.

SUBINVOLUTION.

This woman began her labor with pains on New Year's Day, and the next day was delivered naturally without forceps. She was allowed to rise from her bed early and went to her work. In one week she came back with a tender abdomen, and examination showed subinvolution of the uterus. Her flow continued three weeks after parturition, and was bloody. Uterine involution requires not less than eight weeks, and the woman is considered unwell for six weeks. This woman sat up one week after labor; went to work two weeks after. It was not wise to let her sit up after a week. She has a retroversion of the uterus, due to position. For the first two days she should lie on her back, and, after that, lie on her sides, to prevent a dislocation of the uterus. I think that, if this woman had rest enough, she would not have this displacement. As it is, the discharge returned, and we put her back to bed in a horizontal position, and gave ergot. Ergot is necessary in this condition, and I would give a copious hot water vaginal injection—a gallon at least, for you get no good results from small injections. Repeat three times in twenty four hours. Use an antiseptic agent in the injection.

In one hundred and forty cases of childbirth in the Woman's Hospital, not one case of puerperal septicæmia occurred, because of the use of antiseptics. Where antiseptics are used, this complication is banished.

This woman has a poor appetite, and her pulse is weak, and she needs a tonic of iron. Will give her a teaspoonful of elix. ferri, quinina et strychnina phos. three times a day, and, in addition, will give her a teaspoonful of extract. ergota fluid. three times a day. The Albert Smith pessary is the best for maintaining the uterus in place after it is replaced. She will remain in bed for a week, and two weeks would be much better than one. She should wear a pessary for three or six months, to obtain a permanent result. Assume the knee chest position frequently, as it acts well upon a retroflexed uterus.

She has not enough milk, due to her weakness and too much blood in the uterus. Take nutritious food—milk, cocoa, and broths—to increase milk. If

she could drink three or four pints of milk in every twenty-four hours, it would answer very well.

Do not let your patient, in ordinary cases, sit up before the fourteenth day; it is not wise. But I think that, at the end of the twentieth day, she may leave her room, and, at the end of six weeks, she may go out of doors.

I should lay down certain commandments to be observed:

Thou shalt not get up when there is a red flow.

Thou shalt not sit up before two weeks.

Thou shalt not work before three weeks, and

Thou shalt not go out of the house before six weeks.—*Parvin*

EPIDIDYMITIS.

This is a case of epididymitis consequent on gonorrhœa. A large inflamed mass runs up the posterior part of the scrotum, which is the epididymus. It comes on in the fourth or fifth week of an attack of gonorrhœa. It is probably due to an extension of the inflammation to these parts from the urethra. Treatment varies with the author. First of all, rest in bed on the back with the testicle elevated. (Let a felon hang down and it beats; hold it up and the beating stops. So it is with the testicle.) Elevate it by a handkerchief placed around the testicle, or scrotum, and drawn well up and tied to a band around the waist. Then keep it wet with this application.

℞.—Tincturæ opii . . . . . f ℥j.
Liq. plumbi subacetat dil. . . . . f ℥v.
Tincturæ aconiti . . . . . f ℥j.
Misce fiat mistura e sig.: use locally to bathe the parts.

Poultices are objectionable, as also are punctures and blisters. In five or six days the swelling subsides, as does the pain, and then use the method of strapping. Don't use the straps in the stage of swelling on account of gangrene; but where it has reached its full size with aching pain use them. Relax the scrotum and strap from above down, and cover every portion of the skin of the scrotum. Relief is marked in one half hour or less.—*White.*

MEDICO-CHIRURGICAL HOSPITAL.

TYPHOID FEVER.

ON January 9, Rev. Dr. M——, an Italian missionary, was admitted to the Medico-Chirurgical Hospital, supposed to be suffering with *la grippe*. Examination, however, showed that he was in the initial stage of typhoid fever. He was placed upon a diet of peptonized milk, and ordered salol, gr. v. every three hours, with antipyrin added when the temperature rose above 103° F. By the evening of the 13th, the temperature reached 104.6° F; and varied between this point and 101° F. until January 20. Once it fell to 100.2° F. The pulse varied between 96 and 106. On January 20, the treatment was changed to the sulpho-carbolate of zinc, gr. iij every four hours. Peptonized milk was continued as the diet, with the raw white of an egg and a teaspoonful of bovinine, every four hours. No other food was given, and only well-boiled water as a drink, with an ounce of light Egg Harbor wine occasionally. The stools, which had retained their fetor during the use of salol, were free from all unpleasant odor after one day of the sulpho-carbolate. The effect upon the temperature may be determined by the following data:

January	12,	morning,	102.8°	F.,	evening,	103	° F.
"	13,	"	101.6°	"	"	102.8°	"
"	14,	"	104.6°	"	"	101.6°	"
"	15,	"	101°	"	"	104°	"
"	16,	"	103.2°	"	"	100.2°	"
"	17,	"	103.6°	"	"	103°	"
"	18,	"	104°	"	"	101.4°	"
"	19,	"	101.4°	"	"	103.2°	"
"	20,	"	103.4°	"	"	102.4°	"
"	21,	"	103.6°	"	"	101°	"
"	22,	"	102.4°	"	"	101.4°	"
"	23,	"	101.4°	"	"	100°	"
"	24,	"	98.4°	"	"	100°	"
"	25,	"	101.4°	"	"	99°	"
"	26,	"	101.4°	"	"	99.8°	"
"	27,	"	98.4°	"	"	100.6°	"
"	28,	"	98.4°	"	"	99.6°	"
"	29,	"	99.2°	"	"	99.4°	"
"	30,	"	98.4°	"	"	99.2°	"

From the latter date the temperature varied only within normal limits until February 9, when an attack of local inflammation caused a slight rise for a few days. From the time the zinc salt was given, the diarrhœa, tymphanites, and delirium ceased, and the bowels were moved by enemas every alternate day. There was a singular degree of hyperæsthesia at first, the patient starting up excitedly whenever a bell rang or a door slammed. This had every appearance of being an unusually severe case; a profound impression being manifested upon the nervous system. However, he made a good recovery; went to the sea-shore for a few weeks, and returned looking quite fat and rosy, though unable to perform any mental labor which involved severe or sustained exertion. The salient points in this case are:

1. The initial symptoms pointing to an unusually severe case with especial implication of the nervous system.

2. The absence of hemorrhage, or of severe tympanites, or diarrhœa.

3. The beneficial action of the antiseptics, in preventing the grave intestinal accidents and transforming a threatening case into one of comparative mildness. I think that the salol proved of undoubted benefit; though not nearly so much as the sulpho-carbolate of zinc, whose decided action upon the fever is shown above, and which at once put an end to the diarrhœa, tymphanites, and the fetor of the stools, which had been checked by the salol.

4. The limitation of the diet to pre-digested stomach-foods accomplished the double object of nourishing the patient, and preventing the abnormal processes, which must be set on foot when decomposable substances are introduced into an intestinal canal which is disabled from digesting them. That the food given in this case was entirely unobjectionable is shown by the absence of all intestinal disturbance. And this leads me to say, that the uniformity with which this result is obtained renders it probable that improper food, and irritant drugs, give rise to most of the intestinal disturbances of this fever.—*Waugh.*

The Times and Register

A Weekly Journal of Medicine and Surgery.

New York and Philadelphia, April 12, 1890.

WILLIAM F. WAUGH, A.M., M.D., Managing Editor.

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ENTRANCE EXAMINATIONS.

THE Legislature of New York has before it a bill which, if passed, will repeal the law compelling students to undergo an examination as to their fitness, before entering the class of a medical college. There is much to be said in favor of these entrance examinations. They are of the greatest importance to the students; for, if applicants are not qualified by nature, or by education, to enter upon the study of medicine, it is surely to their interest to ascertain their unfitness at the beginning of their medical course, instead of being rejected at the final examination, after having spent years of fruitless effort, and much money. The absence of such a preliminary inquiry leads to a large percentage of rejections at the final examination; or to the slipping through of the M.D.'s whose illiteracy so frequently furnishes grounds for foreign sneers at the American profession. To the applicant, then, the matriculation examination is an unmixed benefit.

As far as the colleges are concerned, the question is not so clear. To be of practical value, the teaching must be such as will be comprehended by every member of the class; hence, the standard will be regulated by the acquirements of the least worthy. This places the grade of such schools as have no entrance examination at a low point; whereas, if the lecturer has a class of reasonably intelligent and well-educated pupils, he can do himself more credit, and teaching will be far more pleasant, and, hence, more effectual, than when given to a class of ignoramuses. The exaction of a preliminary test relieves the college of the disagreeable necessity of "plucking" a large proportion of its class, and of the temptation to let the weaker ones slip through. It is not creditable to a college to reject a large number of its students, as it may fairly be held to indicate an incapacity for imparting information. Great acquirements by no means carry with them the power of transmitting the stored-up knowledge to others. On the contrary, the man who knows but few things, often succeeds best as a teacher, if those few are the most essential facts of the case in question. Not only an entrance examination, but frequent questioning is essential, that a teacher may keep himself in touch with his pupils; may judge of their capacity and his own success in imparting knowledge. If this be carried out fully, the final examination becomes superfluous, and may, with advantage, be dispensed with. This would be a boon to the student, who is now disturbed through his last term by the dread of that impending ordeal, on which so much depends. He quits studying, neglects laboratories and clinics, and spends his time in cramming from compends a lot of bald facts, which he forgets within a few weeks. It must not be forgotten that the student's object is not the passing of examinations, but the preparation for his future career as a physician.

The objections on the side of the colleges are wholly financial. Students who would pay the fees of their course and be finally rejected, are stopped at the outset, and the college loses. Much more important is the absurd and exaggerated fear which students have of the entrance examination. Most of them are painfully conscious of the gaps in their education, and dread the exposure of their ignorance. They will go off to any other school, regardless of the advantages lost, to avoid these examinations. Men, of whose fitness there could be no doubt, have applied for matriculation, and, as soon as they discovered there was an examination to be passed, have left the city in despair. Of course, it is natural to conclude that such chicken-hearted fellows would never be able to meet the exigencies of the doctor's life; but this is not necessarily the case.

These, and many other difficulties, could be remedied by concerted action on the part of the medical colleges. Were their requirements to be made uniform, or the licensing power divorced equally from the teaching bodies and the State Boards, and regulated by the general government, there would be no further opposition on the part of the colleges to entrance examinations, or other means of advancing the standard of medical education.

The old Association of Medical Colleges failed through the opposition of the great Eastern schools. It is with much regret that we now see the New York colleges advocating the repeal of the entrance-examination law, and thus indicating their opposition to the true interests of the profession. As a policy, their course is unwise; for although it may serve to increase their classes at first, at the expense of the local schools, it tends to stimulate the enactment in each State of laws which operate, directly or indirectly, in favor of the local schools, by giving their friends some degree of control over the licensing to practice. Unless there are better reasons for their action than appear on the surface, the action of the New York colleges will do them harm in the long run.

MALIGNANT measles prevail about Lansdale.

ABSORBING CATARACTS.

WHAT may prove to be a very valuable discovery forms the subject of an article, by Richard Kalish, M.D., in the *Medical Record*, of March 29.

If, as the author claims, he has discovered measures by which, in certain cases, incipient cataracts may be not only checked in their growth, but also in great measure absorbed, then truly he has unearthed a treatment which is destined to prove a great boon to mankind.

"Surgery," it has often been said, "is the opprobrium of medicine," and in few directions has the administration of drugs heretofore proved so utterly fruitless as in the attempted prevention of, or cure of, cataracts. To the inflowing questions of the patient, who finds the light of day, the faces of loved ones, the fruit of books, pictures, papers, all vanishing from the sight, the unvarying refrain of the oculists' answer has thus far been: "I am very sorry, sir, or madam, but we can do absolutely nothing for your eyes until the cataract is ripe and the eye is blind." "How long will it be?" "Oh, indeed, I cannot say; it may be a long time, years perhaps, certainly months."

Nor yet, again, can the ophthalmic surgeon promise success, and the fear of helping to form part of the 8 or 10 per cent. of failures must be torture to any thoughtful and sensitive person.

Dr. Kalish says that he has thoroughly tried many of the treatments advocated for the relief of cataracts, but in vain. Cineraria maritima, pulsatilla, electricity, castor-oil, salvine, each was tried and discarded. Finally, he discovered a method of combined instillation and manipulation, which, in the six cases thus far detailed by him, has yielded astonishingly good results. Two drops of a mixture of equal parts of glycerine, with a 1 per cent. solution of carbolic acid in rose water, are instilled into the eye, and with the patient seated in a chair, having a back high enough to support the head, "the operator, standing or sitting behind the patient, places both hands over the closed eyes, so that the tip of each middle finger rests upon the eyeball at its nasal side, the index and ring finger falling into place beside the middle finger. With slight pressure upon the eyeball the three fingers are drawn outward over the eye to the temporal side. This procedure is repeated twenty to thirty times a minute, the stroking being in one direction only, and continued for ten minutes, when a second installation of two drops into both eyes should be made, manipulation carried on as before for ten minutes; then a third instillation, followed by manipulation for ten minutes. This treatment is to be continued daily for a week, and then the interval between the instillations lengthened to fifteen minutes, making the treatment three-quarters of an hour in duration."

The eyes should now be treated every other day, and this kept up for three or four months.

He has found that instillation alone had no beneficial effect; such, also, was his experience with manipulation alone; they must be conjoined. Furthermore, the treatment must be employed by a skilled hand, else more harm than good may result. In one case, for instance, in which the sight was growing worse, under the manipulation of an unskilful attendant, immediate improvement was observed when the author took the matter in hand.

Dr. Kalish remarks that in only one of the six cases reported did the tension seem normal, but that, under treatment, the tension of all decreased, and he queries as to what may be the relation between this increase of tension and the cataractous condition, incidentally suggesting that the same procedure may prove of service in beginning glaucoma. We shall await with interest further reports, both from Dr. Kalish and from others, who, we know, will give this treatment a fair and thorough trial, hoping, in the meantime, that there really has been discovered a valuable method of coping with what has heretofore been one of the most obstinate and intractable of maladies.

—E. B. S.

Annotations.

OUR DEBT TO THE SPECIALIST.

WHILE it is doubtless true that each specialist glorifies his own favorite branch of the healing art, and attributes to it an importance out of all proportion to its true value, yet it must be acknowledged that even in his exaggeration there are grains of truth

Recent oculists take the advanced ground that all headaches are of ocular origin; and, while we cannot accept this dictum, our attention is nevertheless called to the great frequency of ocular headaches, and to the presence of optic defects hitherto unrecognized.

Some of the most enthusiastic laparotomists are so deeply impressed with the importance of the uterine functions and their potent influence over the female organism, bodily and mental well-being depending on genital normality, that in every ailing woman they see indications for their favorite operations. In their eyes, woman is simply a breeder. Her whole object in life is as the recipient of the seed, and its development into man; and she has no other function excepting those which enable her to fulfil this only object of her creation. As the detective was accustomed, on the report of a crime, to say, "Where is the woman?" so, when they hear a female complain, they say, "Where is the womb?"

Nevertheless, the knowledge of the wide range of affections which may depend upon sexual abnormalities for their causation, forms one of the greatest modern contributions to the medical art.

We have before us a pamphlet entitled, "Throat and Nose Affections in Children, in Relation to Certain Derangements of Sleep, Temper, Spirits, Energy, and to Intellectual Power, and Other Brain Functions. By Scanes Spicer, Physician to the Throat Department of St. Mary's Hospital, and Lecturer on Diseases of

the Throat in the Medical School." The author states that in the course of his practice upon this group of affections, he was surprised to find symptoms relating to the nervous state ceasing as soon as the nasal disease was relieved. He quotes, also, the testimony of Woakes, Rumbold, Yearsley, and Guye as to the occurrence of melancholy, decrease of nervous energy, and aprosexia, in cases of obstruction of the nasal passages. The latter suggests that this may hinder the free discharge of lymph from the brain, through pressure on those lymphatics that leave the brain through the foramina of the cribriform plate, and connect the subdural spaces with the lymphatic plexuses of the nasal mucous membrane; or, there may be deficient abstraction of water from the mucous membrane by the inhaled air, with non-removal of the products of tissue waste, and exhaustion or irritation of brain-cells by those waste products. This might be manifested by functional derangements like those of exhaustion from defective nutrition.

The author's conclusions are as follows: That certain throat and nose affections in children are causes of derangements in sleep, temper, spirits, energy, intellectual power, and other functions of the nervous system; that long standing derangement in the growing child implies defective nutrition of the tissues; that if no obvious cause exists elsewhere, the nose and throat should be examined; that the most common causes are, chronic catarrh with hypertrophy, post-nasal adenoid vegetations, and enlarged tonsils, and that many nervous and mental symptoms disappear, or are better, after the cure of the local disease.

We do not share the opinions of those who hold that the development of modern specialism has so greatly increased the work of the physician that he is compelled himself to become a specialist—the load having become so heavy that it must be divided among a number. On the contrary, our work has been made easier for us; as we have so many plausible explanations for cases which we were formerly compelled to treat in the dark. Moreover, the cyclopedic works upon every branch contain such full and perspicuous directions, that any physician of ordinary acquirements can treat the great majority of these special cases himself. Probably in not more than one in ten is the advice or hand-work of an exclusive specialist really needed.

THE Fifth Annual Meeting of the American Association for the Advancement of Physical Education, was opened in Boston, April 5. Papers or addresses were given by Messrs. Carl Laap and N. L. Anderson, of Cleveland; Miss Lindley, of Atlanta, Ga.; Luther Gulick, Springfield, Mass.; Miss Hill, of Wellesley College; Miss Ladd, of Bryn Mawr College, and Dr. Walter Channing, of Brooklyn.

It is well that this important subject is being discussed; not that the interest in athletics needs stimulation, but that a healthy control should be exercised over them. All sorts of out door exercises are at present very popular—base-ball, cricket, rowing, etc. In France, a league has been formed for the furtherance of such sports as develop the bodily strength in school children. There is some danger, however, that physical training may be indulged in to the detriment of health; the enthusiasm of young persons going ahead of their judgment. This gives special point to Mr. Laap's remarks as to the importance of having special teachers to govern the school gymnasia. Mr. Gulick gave as the objects sought in physical training, education, care, and recreation. A more important object than any is the prevention of disease, by judicious training of the body, so as to overcome evil tendencies, and develop parts which are weakly. Physical training should embrace much more than the development of the muscular system. The term, "pulmonary gymnastics," describes a most important branch of this subject; the heart may be strengthened, the liver and kidneys relieved of undue burdens, the nervous system strengthened by suitable hygienic regimen. Perhaps the day may come when the family physician will be wise enough to prescribe the kind and amount of labor for which his patient is best fitted; and the production of disease by special or general over-work will cease.

REPORTS in the daily press state that a Minnesota physician has had his license revoked by the State Medical Examining Board. The reason given is that, while a patient was recovering from the effects of an anæsthetic, he accidentally kicked one of the surgeons, who, becoming enraged, struck the patient a terrible blow on the eye, almost entirely destroying the sight. It is further intimated that the action of the Board was influenced by some publications of the physicians, which were not relished by the Board.

The reports of matters medical by the secular press are too uncertain to warrant us in forming any opinion upon the matter; but it appears exceedingly improbable that the Board would revoke a license as a punishment for a very reprehensible, but unpremeditated, fit of anger. To forbid a man the exercise of the profession by which he earns his bread, to deprive him of the capital which he has obtained—for, in general, the practice one has built up is about all the capital a physician possesses—would be a Draconian penalty for the offense. Such a condemnation would go far towards convincing any ordinary legislature that it was not wise to lodge so much power over their business rivals in the hands of a board of professional men.

THE Inter-State Quarantine Act, approved March 28, is the outgrowth of necessities developing during the last epidemic of yellow fever. It provides that when cholera, yellow fever, small-pox, or plague exists in any State or Territory, the President is authorized to make such regulations as he may deem necessary to prevent the spread into another State. The rules are to be prepared by the Surgeon-General of the Marine Hospital Service, under the direction of the Secretary of the Treasury. Violation of such rules is made a misdemeanor, punishable by fine of not more than $500, or imprisonment up to two years, or both.

Section two provides penalties for the violation of these rules by quarantine officials, whose culpability is rated at a maximum of $300 fine, or one year in jail, or both.

Section three places the penalty to be assessed upon a common carrier, or its employé, at the same rate as a private person.

Both these sections are ill-judged; the penalties for officials infringing the rules they are employed to enforce, and for common carriers, which, by disobedience, may endanger the community far more than any private individual could, should be much larger than they are made by this bill.

WOOD alcohol is being looked upon with some suspicion by the Treasury officials; some claiming that it is used as an intoxicating beverage. The *Pharmaceutical Era* doubts this, believing that the disagreeable taste and the damaging effect upon the human economy precludes all idea of its becoming a popular tipple. If the tippler can get anything better, this may hold good; but nobody who has ever witnessed the spectacle of a man wild for his rum and unable to get it, could doubt that he would drink anything which could intoxicate him. Sailors have broken the compasses of their ships in mid-ocean to get the alcohol they contained. The Frenchman drinks absinthe, in spite of its noxious qualities; the drunkard swallows Jamaica ginger or tincture of myrrh and capsicum by the pint, when he cannot get ordinary liquor. In fact, there is a species of craving for liquor, which is really insanity; and, in this condition, neither taste nor wholesomeness will prevent the victim from drinking anything which will intoxicate.

Book Reviews.

A NEW MEDICAL DICTIONARY. Including all the Words and Phrases used in Medicine, with their Proper Pronunciation and Definitions. Based on Recent Medical Literature. By GEORGE M. GOULD, B.A., M.D. With elaborate Tables, Appendices, etc. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut street, 1890. Pp. 519.

The author states that his object has been to include the new words and phrases created during the past ten years (a period during which many new words have been coined, relating to bacteriology, electrotherapy, etc.); to give satisfactory definitions; to omit obsolete words; and to do all this without making a volume too bulky or too costly for general use. This dictionary, then, is to be looked upon mainly as supplementary to the larger works of Dunglison and others, supplying the increment since their publication. That there is a need for just such a work will be felt by every reading physician. This task has been well accomplished; while, at the same time, enough of the older terms have been retained to make the book answer the wants of those who have no other medical dictionary, for all ordinary purposes. The tables are of especial value and interest.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. Vol. 5, No. 1, January, 1890: Neuralgia, Its Etiology, Diagnosis, and Treatment, by W. R. Gowers, M.D., F.R.C.S.; The Prognosis of Diseases of the Heart, by Prof. E. Leyden, Berlin; The Sputum, A Contribution to Clinical Diagnosis and Practical Examination for the Tubercle Bacilli, by Peter Kaatger, M.D.; Hypnotism, Its Significance and Management Briefly Presented, by Dr. August Forel; The Form of Nasal Obstruction, in Relation to Throat and Ear Diseases, by Greville McDonald, M.D. Vol. 5, No. 2, February, 1890: Action of Uric Acid in the Causation of Disease, by A. Haig, M.D., London; Initial Stages of Consumption, their Nature and Treatment, by Horace Dobell, M.D., London; Ectopic Pregnancy and Pelvic Hæmatocele, by Lawson Tait, M.D. Vol. 5, No. 3, March, 1890: Treatment of Cancer by Electricity, by Dr. J. Inglis Parsons, London; The Dreadful Revival of Leprosy, by Sir Morell Mackenzie, M.D.; Diseases of Old Age, by Dr. A. Seidel, Berlin; Urinary Neuroses of Childhood, by Dr. Louis J. Guinon, Paris; Varicose Veins of the Lower Extremities, by William H. Bennett, F.R.C.S.; Uses of Electricity in Surgery, by W. E. Steavenson, M.D., London.

SECRET NOSTRUMS AND SYSTEMS OF MEDICINE. A Book of Formulas. Compiled by CHARLES W. OLESON, M.D. Chicago: Oleson & Co., 1890. 12mo., pp. 206, cloth.

In this the author has collected a large number of formulas for patent medicines and secret methods of treatment, such as Brinkerhoff's and Hall's. Frequently the physician is asked about the composition of these nostrums, and sometimes a knowledge of their active ingredients is of value in cases of poisoning by them. The retail druggist who wouldn't mind substituting his own make of patents for the original stuff will find Dr. Oleson's little book a veritable mine of information.

SAUNDERS' QUESTION COMPENDS. No. 10. Essentials of Gynecology. By EDWIN B. CRAGIN, M.D. With 58 Illustrations. Philadelphia: W. B. Saunders, 913 Walnut street, 1890.

A book that is fully up to the standard adopted by the publishers of the series. The illustrations are especially clear and worthy of mention.

Pamphlets.

Chest Development in Young Persons. By John J. Berry, M.D., Portsmouth, N. H., twenty-three pages. A practical review of an important matter. Instructive illustrations are given.

Vaginal Hysterectomy. By E. E. Montgomery, M.D., Philadelphia, Pa., eleven pages. Dr. Montgomery gives the history of the operation, together with valuable hints as to the best method of procedure. Three cases are reported.

The Treatment of Certain Forms of Gangrene of the Intestine. By Charles B. Penrose, M.D., Ph.D., Surgeon to the Gynecean Hospital, etc., eleven pages. A valuable article illustrating the good that may be accomplished by conservative surgery, where extreme surgical procedures would result fatally.

Drainage in Abdominal Surgery. By Charles B. Penrose, M.D., Ph.D., Philadelphia, Pa., fifteen pages. A strong plea for the more extensive employment of the drainage tube in abdominal surgery.

Thirth-sixth Annual Report of the Pennsylvania Training School for Feeble-Minded Children, Elwyn, Delaware County. The Board of Directors in their report claim for the Institution another year of uniform success. Many improvements and additions are noted, and suggestions made for further improvements in the ensuing year.

The Medical Digest.

REPORTS from Italy deny the existence of any special affection such as that described under the name of "nona."

THE Physician to the Lying-in Hospital, Liverpool, reports, on the authority of "a most intelligent mother (who kept a diary)," one pregnancy lasting three hundred and three days, and another which went to three hundred and nineteen.

IN pneumonia with cardiac feebleness, McPhedran speaks highly of digitalis, if given in full doses twice a day. In a case quoted, he prescribed half a drachm of the tincture, with five minims liquor strychnine.—*Canada Practitioner.*

NEW STYPTIC.—Cotton pledgets, soaked in a saturated solution of antipyrin, and placed in the cavity from which a tooth had been extracted, stopped the bleeding, when perchloride of iron and other remedies had utterly failed.—*Indiana Pharmacist.*

THE *Medical Bulletin* thinks a venereal hospital is needed in Philadelphia. Whether many patients could be induced to enter the wards of such a hospital, is, perhaps, questionable; but the establishment of a dispensary would rescue many unfortunates from the advertising quacks.

STERILIZED MILK is, according to Marr, as badly borne in children's dyspepsias as ordinary milk; for, even when sterilized by Soxhlet's apparatus, milk is still prone to decomposition, and hence favors the decomposition processes present in the diseased digestion-tract.—*London Med. Recorder.*

MAYO ROBSON reported the case of a woman whose urine was loaded with pus. The vesicoscope showed that this came only from the left ureter. The diagnosis of left pyonephrosis was made, the kidney cut down upon, and found to be healthy. The source of the pus proved to be a pelvic abscess, which had opened into the ureter.—*Medical Press.*

THREE-MINUTE OATMEAL.—The *Amer. Analyst* calls attention to the advertisements, which are now becoming so common, of three- and five-minute oatmeal. To cook in from three to five minutes any oatmeal, however prepared, is, it says, simply an impossibility; and it sounds a warning against being deluded by any such specious advertisements.

THE *Chicago Tribune* renews the advocacy of physicians advertising. It has frequently been urged by the lay press that physicians ought, for the benefit of the public and strangers, to insert their cards, giving residence, and office hours. Under certain circumstance, we would, perhaps, be open to conviction on this point; that is, if the cards were inserted only in THE TIMES AND REGISTER. Then, every hotel and every druggist would subscribe for the journal, and great benefit would result to all parties; especially the journal.

SARCOMA OF THE IRIS.—Adolf Orf, M.D. (*Amer. Jour. of Ophthalmology*), relates a case of sarcoma of the iris in a little girl of two years. The eye was enucleated, under the impression that the growth was of a gliomatous nature, whereupon the whole of the iris was found to be affected with what the microscope proved to be nodules of round-celled sarcoma.

RECURRENT PALPITATION.—A case of this was described by Wilson (*Brit. Med. Jour.*), at the Midland Medical Society. The patient, a man, had had three attacks—each lasting several weeks—during one and a half years. The pulse ran up to 150 or 200, without dyspnœa, except in early morning, at 4 A. M., "almost to the minute." They lasted half an hour. He had no organic heart disease, except slight dilatation, with a little cyanosis and anasarca. Digitalis completely relieved the attacks.

PASTEURISM IN CUBA. — At the Bacteriological Laboratory, in Cuba, 306 persons have been treated by the "double intensive" plan. Of these, only two died after going through the full course; a mortality of 1.63 per cent. All these cases were bitten by dogs proved experimentally and clinically to be rabid, or at any rate "suspect." That the operations were conducted with due conservatism is indicated by the fact that only 306 were inoculated out of 700 applicants.

The opposition to Pasteur, if it still exists, has dwindled down to an infinitesimal point.

SALOL IN THE GASTRO-INTESTINAL DERANGEMENTS OF CHILDREN.—Salol is an easily administered, safe drug, in the first stage of acute gastro-enteritis in children, and in the more chronic forms of entero-colitis, accompanied by slimy, bad-smelling evacuations. In the acute condition, it is necessary to keep the stomach at rest and administer two or three doses of salol within five or six hours. For the more chronic state of catarrh it is best given in somewhat larger doses before meals. In frequent serous discharges, and in colitis, the salol does not produce the same good results as in the cases mentioned above, and its effect is uncertain, not being so rapid or so sure as an opiate.

In dysenteric disorders it cannot be relied on. It seems, then, that salol acts best in morbid conditions, due to fermentation and decomposition in the stomach and upper bowel, and that it diminishes in power as it passes through the large intestine.

—Walter Lester Carr, M.D., in *Arch. of Ped.*

GONORRHŒA has been the subject of many experiments at Neisser's Breslau clinic. Of all the injections used, the best results were obtained from nitrate of silver, 1–4000, to 1–2000, four to six times daily. The pus becomes thicker and more copious; but, after four days, becomes thinner and scantier. The gonococci diminish remarkably, and may disappear after a few days. Then the injection is reduced to two, and then to one, daily, with alternating zinc or boric acid, and this continued for many weeks. If the patient be very sensitive, the solution may be diluted; or, if necessary, thallin or salicylate of mer-

cury substituted. Of internal remedies, copaiba, cubebs, turpentine, kava kava, ichthyol, sandal, creolin, etc., were tried; but only copaiba gave good results. In fourteen cases out of forty, the effect on the gonococci was marked—the smallest dose being one hundred and sixty drops in two days. In all, the purulence of the discharge was reduced. Epididymitis does not come from the silver injections, nor indicate their discontinuance. Out of 1,200 cases, in but one did epididymitis occur during the use of silver. Rational treatment without the use of the microscope is impossible.—*London Med. Recorder.*

URINARY NEUROSES OF CHILDHOOD. — Guinon, in "Wood's Monographs," gives the following as the conclusions reached in his paper with the above title:

1. There are, in children, a certain number of functional disorders of urinary secretion and excretion without lesions, either local or remote.

2. Incontinence of urine or nocturnal involuntary micturition, and simple polyuria, are the chief disturbances.

3. These disorders are observed at all periods of childhood. They result from the perturbation or irritation of a cerebral or medullary center. They are associated with neuropathic heredity, and coincide with other mental or somatic anomalies in the patient or his relatives.

4. Nocturnal incontinence appears in two distinct classes of children, those who are feebly constituted or are weakened by an acute disease, and, on the other hand, those who have inherited a nervous taint or are degenerated in various degrees. Neuropathics (hysteria, insanity, spinal lesions, etc.), are found in the ancestors. The disease is a benign stigma of nervous and psychical heredity.

5. Simple polyuria is also observed more frequently in children with neuropathic heredity. It co-exists with incontinence of urine in the same families. It may result from the most varied nervous disturbances, but when the latter appear insufficient we always find an hereditary predisposition to abnormal manifestations of nervous activity (degeneration or neuropathic heredity). It does not affect the general condition, and its duration is indefinite.

Polyuria, which is traumatic, or secondary to an acute disease, alone appears capable of recovery.

Hereditary polyuria is a simple polyuria; it cannot be attributed to any diathesis.

IN SCARLATINA, Curgenven (*Brit. Med. Jour.*) claims that eucalyptus can supersede all other curative and preventive measures, and renders isolation unnecessary, as well as disinfection, etc. Reviewing previous attempts at bodily disinfection, he condemns carbolic acid as inefficient, except in caustic concentration; sublimate as dangerous from absorption, permanganate as objectionable, and sanitas as ineffective. Encalyptus is harmless, powerfully germicide, and very volatile. He recommended a mixture of eucalyptol with menthol, and several essential oils and camphors; giving this internally, saturating clothing, bedding, etc., with it, and sponging the entire body with it twice daily, besides sprinkling floor, furniture, walls, etc., with it, until the room is redolent with its odor. He had not sprayed the throat with it, but would have done so had it been needful. The results were, rapid defervesence, from 105° to 100°, or to normal, in a few hours, relief of angina, subsidence of glandular swelling, and the entire absence of albuminuria. If employed in the invasion, the disease was aborted; and as a protective it proved equally efficient.

Possibly this may indicate an astonishing power of eucalyptol over scarlatina; but more probably it means simply that the observer has met with an epidemic of easily managed and uncomplicated cases. A temperature of 105°, with angina too slight to require local treatment, is not apt to be dangerous. Sydenham spoke contemptuously of scarlatina, as a disease existing only in the name; and many practitioners of twenty years' standing have seen epidemics that justified this description; but deductions from them would be of little value in those other prevalences of this disease, when it takes on a malignancy whose terrible intensity is scarcely equaled by any other known disease.

IN a recent clinical lecture Prof. Dieulafoy treated of the therapeutics of asthma in the following manner: At the beginning of the attack paint the inside of the nostrils, as high up as possible, with a camel's-hair brush dipped in a solution of hydrochlorate of cocaine (1 in 20). If preferred, the solution may be sprayed into the nose and throat for four or five minutes at a time, with a tablespoonful of the above solution. If this does not succeed, the patient should be made to inhale from six to twelve drops of pyridine, sprinkled on a handkerchief. The cocaine and the pyridine may be employed simultaneously. When the attack is at its acmé, the following solution may be injected hypodermically: Hydrochlorate of morphine 10 centigrams, distilled water 10 grams, of which half a syringeful should be injected, to be repeated in a quarter of an hour if necessary. The remedy *par excellence* for asthma is the iodide of potassium, given in doses of from 20 to 30 grains daily, but commencing with 5 grains only, to be gradually increased. To combat the diathesis there are three principal medicaments, the iodide of potassium, belladonna, and arsenic. The author recommends the following course of treatment: The patient should take from 15 to 30 grains of the iodide daily for 15 days, then the iodide should be replaced by pills composed of powdered belladonna leaves and the extract of belladonna, of each 4 grains, to be made into 20 pills. At the same time the patient is to take a teaspoonful daily of the following solution, after the principal meal: Arseniate of soda 1 grain, distilled water 2½ fluid ounces. If the patient be emphysematous, the use of baths of compressed air will also be found useful.—*American Practitioner and News.*

TREATMENT OF TYPHOID FEVER BY PROLONGED IMMERSION IN WATER.—Dr. James Barr describes this method in *The Lancet.* The tank consists of a box six feet long, two feet ten inches wide, and twelve inches deep. Each of the two tanks is provided with

a sheet of ticking, so arranged as to allow the patient to be submerged, except the head, which rests on an air pillow. The patient is wrapped in a blanket; not in a sheet. The tank is covered with a half-lid, a water-proof sheet, and bed-clothing to keep in the heat of the water. As long as the patient's temperature is over 100°, the water is not allowed to rise over 90° to 93°; but as the body temperature approaches the normal, so should that of the water. A rise in the temperature of the water of a few degrees is sure to send up that of the patient; and by regulating the heat of the water there is no fear of collapse, as the body cannot fall below that of the surrounding medium. The urine and feces are discharged into the tank[!], that the patient may be disturbed as little as possible. Generally, pure water is used; but it may be rendered aseptic if desired; though mercury was found to salivate. The diet consisted of bread and milk. No alcohol was given. Very little medicine was used, though Dr. Barr states that he is a firm believer in intestinal antisepsis.

The effects of this treatment are thus analyzed:

Temperature.—In fevers the anabolic changes play a small part in the tissue metamorphoses, and hence we get rapid wasting. The greater the change the greater the vitality, so long as the anabolic changes compensate the katabolic; but in fevers, the increased combustion tends to tissue-death rather than renovation. If the reduction of heat be a mere abstraction without diminution of heat production, there is little gain. We want a true antipyresis, where thermogenesis is lessened, thermolysis regulated, and the thermotaxic mechanism improved. By the tank, the evening rise is moderated, the remission is longer and deeper, and the daily mean lowered.

Circulation.—Marked improvement in vasomotor tone; pulse slower, fuller, more tense. Heart maintains its vigor; in no case was there any fear of heart-palsy. There might be danger in placing a patient in the tank in the third week, with exhausted heart, as the weak organ might not be able to cope with the increased peripheral resistance. There was no hemorrhage in any case thus treated.

Respiration.—Pulmonary symptoms were moderated, even when severe.

Digestion.—The improvement here was, perhaps, greater than anywhere else. The tongue cleanses, saliva increases, appetite and digestion improve, and diarrhœa lessons, while the dejecta more nearly approaches the normal.

Nervous System.—Delirium disappears, and general well-being improves.

Urinary.—Albumen disappeared in two cases.

Weight.—One case lost seven pounds out of forty-three in nine days. Another fell from ninety-seven and a half to ninety-two pounds in six days. Another from one hundred and fifteen to ninety-five pounds in twenty-seven days in the tank, and then gained three and three-fourths pounds in four days.

Skin.—Little effect.

Tissues.—Less dehydration than usually seen in fevers.

Twelve cases were treated in the tank, all of which recovered.

Medical News and Miscellany

CINCINNATI is threatened with a water famine.

THE medical class at the University numbered 485.

IN Siam, a dangerous form of dysentery is prevalent.

THE report of the New Jersey Dairy Commission shows that of 2,507 food articles analyzed, 1,102 were adulterated.

CHICAGO'S doctresses talk of holding an International Congress of Female Physicians during the World's Fair.

THE American Society of Microscopists has changed its place of meeting from Louisville to Detroit, August 12 to 15.

DURING the first quarter of 1890 the burials in Philadelphia numbered 6,387, as against 5,100 in the same quarter of 1889.

DR. H. C. DEAVER has been presented with a handsome case of surgical instruments, by his pupils of the University Medical Quiz.

THE S. P. C. A. has erected, at its rooms, two cases for the display of appliances for the comfort of animals. Samples are asked from manufacturers.

ON Thursday, the Home for Incurables of the Episcopal Hospital was dedicated, with appropriate ceremonies, as a memorial of the late George L. Harrison.

THE Southwestern Dispensary, during March, treated 102 medical cases, 118 eye and ear, 22 surgical, 36 nose and throat, and 8 gynecological; total, 286.

THE Brooklyn physician, who secured $1,700 from the City Controller by false reports of his alleged hospital, was sentenced to four years in the penitentiary.

PHILADELPHIA has built, since 1880, more dwellings than either Boston, Baltimore or St. Louis contained in 1880. She now numbers 146,412, against New York's 73,684.

MRS. E. M. AARON, of 1832 Pine St., has been awarded the first prize offered by R. H. Lamborn for the best essay on the destruction of mosquitoes, especially by dragon-flies.

DR. A. T. CHASE has been sued for malpractice by a patient. The latter claims that the doctor failed to diagnose the severance of a tendon in her foot until it was too late to remedy the injury.

The success of ostrich-farming in California has prompted the recommendation of seal-farming in the Michigan lakes. There are plenty of business chances open to men who have business ability and enterprise.

IT is reported by that veracious journal, *London Truth*, that a Scotch chimney-sweep received from the agent of an American college a diploma granting him the title of LL.D., in payment for services rendered.

SMALL-POX prevails at Athens, Greece.

A DEATH from trichina is reported at Lisbon.

THREE hundred deaths from drunkenness are reported in Odessa during one year.

THE Second Annual Meeting of the Congress of Electricity will be held in June, at Paris.

THE number of medical students in Austria has fallen from 5,666 last winter, to 5,030 at present.

PHILADELPHIA COUNTY MEDICAL SOCIETY.—At the stated meeting this week, by invitation of the President and Board of Directors, Dr. Frederick S. Dennis, of New York, reported One Thousand Cases of Compound Fracture. Discussed by Drs. John H. Brinton, John Ashhurst, O. H. Allis, J. William White, Joseph Hearn, and John B. Dever.

IN his annual message, Mayor Fitler recommends an increase in the number of milk inspectors, and the removal of the Municipal Hospital to a neighborhood where it will be less objectionable. He opposes the removal of the Almshouse to the House of Correction grounds, as this would curtail the quarry and destroy the truck-patch; and ample vacant ground exists at Blockley for the erection of a new Almshouse, or such new wards for the Hospital as will be required in the next fifty years.

THE Eighteenth Annual Meeting of the Franklin Reformatory Home, 907 Locust street, was held on April 7. The Treasurer's report showed the receipts to have been $12,994.87, and the expenses, $12,579.34. Whole number of inmates during the years from April 1, 1872, to March 31, 1890, 4,634; of whom 1,788 were free, and 1,104 paid but a nominal sum; the remainder paying an average of $6 per week. Forty per cent. of cures is claimed. The attending physicians are James and Edwin E. Graham.

THE Ninth Annual Commencement of the Medico-Chirurgical College, of Philadelphia, was held at the Chestnut Street Opera House, Thursday, April 10, 1890, at noon.

The exercises were opened with Prayer, by Rev. Charles W. Buoy, D.D. The Degrees were conferred by Wm. H. Pancoast, A.M., M.D., President. The Address to Graduates was given by Prof. John V. Shoemaker, A.M., M.D. Then followed the presentation of Prizes, and the ceremonies were closed with the benediction.

Graduates.—Emanuel A. Alleman, Pa.; Samuel Traner Buck, Pa.; Lawrence Cauffman, N. J.; Philip Reybold Cleaver, Del.; Charles Eastlake Conner, Pa.; John Saxton Deemy, N. J.; F. Emanuel Doering, Manitoba; Nathaniel Z. Dunkelberger, Pa.; Thomas B. Earley, Pa.; Frank Ulysses Ferguson, Pa.; Carlos Emmor Godfrey, N. J.; Charles W. Green, Pa.; Charles W. Hate, Kas.; John K. Henry, Pa.; Henry W. Hunsberger, Pa.; Gregory H. Hovnanian, Turkey; William Talmage James, Pa.; Robert J. Mueller, Pa.; Rodrigo Perez de Yarto, Mexico; Orrin Harvey Rosser, Pa.; Pearson Serrill, Pa.; George F. Stevenson, Pa.; William Blair Stewart, Pa.; John Erskine Taylor, Manitoba; Levi F. Wagner, Pa.

Prizes.—The Faculty Gold Medal, for the highest average on final examination: William B. Stewart, of Pa. With honorable mention of N. Z. Dunkelberger, Pa.; F. U. Ferguson, Pa.; G. H. Hovnanian, Turkey; O. H. Rosser, Pa.; R. J. Mueller, Pa.; P. R. Cleaver, Pa.; J. S. Deemy, N. J., and S. T. Buck, Pa.

Gold Medal for highest average in Practice of Medicine: William B. Stewart, of Pa. With honorable mention of N. Z. Dunkelberger, Pa.; S. T. Buck, Pa.; R. J. Mueller, Pa.; R. Perez, Mexico; O. H. Rosser, Pa.; L. F. Wagner, Pa., and F. U. Ferguson, Pa.

Gold Star Medal for highest average in Anatomy: William B. Stewart, of Pa. With honorable mention of G. H. Hovnanian, Turkey; J. S. Deemy, N. J.; R. J. Mueller, Pa.; L. Cauffman, N. J.; N. Z. Dunkelberger, Pa.; F. U. Ferguson, Pa.; P. R. Cleaver, Pa.; C. E. Canner, Pa., and C. W. Green, Pa.

A Case of Instruments for the highest average in Surgery: N. Z. Dunkelberger, of Pa. With honorable mention of G. H. Hovnanian, Turkey; W. B. Stewart, Pa.; J. S. Deemy, N. J.; L. F. Wagner, Pa.; O. H. Rosser, Pa.; C. W. Green, Pa.; S. T. Buck, Pa.; C. E. Conner, Pa.; F. E. Doering, Manitoba; W. T. James, Pa.; J. K. Henry, Pa.; R. Perez, Mexico; T. B. Earley, Pa.; F. U. Ferguson, Pa.; H. W. Hunsberger, Pa.; E. A. Alleman, Pa.; L. Cauffman, N. J., and R. J. Mueller, Pa.

Set of Instruments for the highest average in Gynecology: John S. Deemy, of N. J. With honorable mention of W. B. Stewart, Pa., and N. Z. Dunkelberger, Pa.

A Pair of Obstetric Forceps for the highest average in Obstetrics: W. B. Stewart, of Pa. With honorable mention of L. Cauffman, N. J.; R. J Mueller, Pa.; J. E. Taylor, Manitoba; N. Z. Dunkelberger, Pa.; R. Perez, Mexico; C. W. Green, Pa.; J. K. Henry, Pa.; S. T. Buck, Pa.; L. F. Wagner, Pa.; C. E. Conner, Pa.; G. H. Hovnanian, Turkey, and F. U. Ferguson, Pa.

Special Prizes offered by Dr. Spencer Morris for the highest average obtained in Differential Diagnosis and Hygiene, were awarded as follows: First Prize of thirty dollars ($30.00) to W. B. Stewart, of Pa. Second Prize of twenty dollars ($20.00) to Gregory H. Hovnanian, of Turkey.

A Free Scholarship for the ensuing session for the highest average in the studies of the second year to James MacKellar, of Pa. With honorable mention of F. Frutchey, Pa.; G. J. Thomas, Pa.; E. R. Raseley, Pa.; S. P. Gerhard, Pa.; F. K. Quail, Pa.; R. F. Longacre, Pa.; A. Trapold, Texas; T. C. Sangree, Pa.; J. E. Grube, Pa.; J. A. Cramp, Pa.; J. H. Cooper, Pa.; M. D. Van Horn, Pa.; I. G. Shoemaker, Pa.; S. Montegut, La.; F. H. Maier, Pa.; I. M. Koch, Pa., and E. B. Wenner, Pa.

A Free Scholarship for the highest average in the studies of the first year to Gordon L. Harker, of N. J. With honorable mention of H. J. Bell, Pa.; H. L. Clayton, Del.; C. J. Steim, Pa.; C. H. Richardson, Pa., and T. B. O'Reilly, Pa.

A Gold Medal by Dr. H. C. Boenning, Demonstrator of Anatomy, for the highest average in his examination to James MacKellar, of Pa.

TENTH INTERNATIONAL MEDICAL CONGRESS (to be held in Berlin, August 4 to 9).—The Committee of Organization of the Tenth International Medical Congress—R. Virchow, *President;* E. von Bergmann, E. Leyden, W. Waldeyer, *Vice-Presidents;* O. Lassar, *Secretary-General*—have appointed the undersigned members of an American Committee for the purpose of enlisting the sympathy and co-operation of the American profession.

We are assured that the medical men of our country will receive a hearty welcome in Berlin. The Congress promises to prove of inestimable value in its educational results, and in securing the ties of international professional brotherhood. It is most important that the American profession should participate both in its labors and its fruits.

Delegates of American medical societies and institutions, and individual members of the profession, will be admitted on equal terms. The undersigned, therefore, beg to express their hope that a large number of the distinguished men of our country will appreciate both the honor conferred by this cordial invitation and the opportunity afforded us to fitly represent American medicine.

The arrangements in regard to a few general meetings and the main scientific work, which is delegated to the sections, are the same as in former sessions. A medico-scientific exhibition, the programme of which has been published a few weeks ago, is to form an ingredient part. It is to the latter that the Berlin Committee is very anxious that both the scientific and the secular press should be requested to give the greatest possible publicity. The office of the Secretary-General is Karlstrasse 19, N. W., Berlin, Germany.

S. C. Busey, Washington, D. C.; Wm. H. Draper, New York; R. H. Fitz, Boston, Mass.; H. Hun, Albany, N. Y.; A. Jacobi, New York; Wm. T. Lusk, New York; Wm. Osler, Baltimore, Md.; Wm. Pepper, Philadelphia, Pa.; J. Peyre Porcher, Charleston, S. C.; J. Stewart, Montreal, Can.

ALUMNI ASSOCIATION OF THE MEDICO-CHIRURGICAL COLLEGE.—The annual dinner of the Alumni Association of the Medico-Chirurgical College, took place in the College building, on Cherry street, above Seventeenth. The banqueting hall was brilliant with flags and bunting, while an abundance of foliage and floral growing plants was picturesquely placed about the apartment. A pyramid of plants stood immediately behind the Chairman, and over this was a handsomely executed crayon portrait of Prof. Ernest Laplace, the special guest of the occasion. Prof. W. H. Pancoast presided, and Prof. Laplace, Wm. M. Singerly, Dr. Peter D. Keyser, Gen. J. P. S. Gobin and Robert M. McWade sat at his right, Col. John P. Nicholson, Prof. Henry I. Dorr, D. D. S., the Rev. Charles W. Buoy, D.D., Dr. John V. Shoemaker and Col. A. K. McClure to his left.

About eighty alumni and their guests were at the table, and each of them found in his place a neat, hand-painted plate card. The designs on those intended for the members of the Faculty of the college were clever caricatures of some trait peculiar to the recipient. That of Dr. Pancoast, the anatomist of the college, had a good portrait of the Professor surmounting a skeleton frame; that of Dr. Shoemaker, who delivered the valedictory at the commencement exercises, portrayed him, in cap and gown, and reading an address. Dr. Goodman, who has a war record, was presented in full military costume, with the bages of the various soldier societies to which he belongs, strung upon his breast; Dr. Keyser, the opthalmologist, was shown with huge spectacles upon his nose, looking intently at some astigmatic cards, while Dr. Waugh was seen in one of his favorite attitudes while addressing classes Among the others present were Hamilton Disston, Dr. J. E. Garretson, Claus Spreckels and Frank Siddall.

After an elaborate ménu was discussed, the set toasts were responded to as follows: The Alumni, Dr. Ernest B. Sangree; The Alma Mater, Prof. W. H. Pancoast, M.D.; The Faculty, Prof. P. D. Keyser, M.D.; The Necessity of Higher Medical Education, Prof. Ernest Laplace, M.D.; The Medico-Chirurgical Hospital, Col. John P. Nicholson; The Press as a Factor in Higher Education, Col. A. K. McClure, and The Necessity of Specialties, Prof. Henry I. Dorr, D.D.S.

The college colors, olive, gold and red, were beautifully combined in the front page of the ménu; a sunburst in olive in the center, surrounding the letters "M. C. C.," in gold, while below in red was the inscription "Annual Dinner to Professor Ernest Laplace, by the Alumni Association of the Medico-Chirurgical College of Philadelphia." The dinner committee comprised Dr. John Welsh Croskey, Chairman; Dr. Frank Fisher and Dr. M. H. Cryer.

In the clinical amphitheatre, just before the annual dinner, Prof. Laplace delivered an oration on The Modern Physician.

At the annual meeting, which was held in the morning, the following were elected: *President*, Wm. H. Pancoast, M.D., *Vice-Presidents*, Thomas B. Earley, M.D., J. W. Krug, M.D., Manley F. Gates, M.D., A. J. Maher, M.D., J. Clyde McCartney, M.D., W. X. Sudduth, M.D., Albert Kolb, M.D., Henry Fisher, M.D., and P. Appleman, M.D.; *Secretary*, John S. Stewart, M.D.; *Treasurer*, John Welsh Croskey, M.D.; *Chairman of the Executive Committee*, John V. Shoemaker, M.D.

Prof. Laplace, having been selected by the Executive Committee to give the annual address to the Alumni Association, was elected an honorary member.

One feature of the entertainment which we would like to call attention to was the speech by Col. McClure; it was a most brilliant one and covered the ground admirably. One thing he referred to was the benefit of antagonism. "Gentlemen," he said, "one of the greatest advances is the system of homœopathy." At this point a slight murmur ran through the room, and a mild "Oh!" from Prof. Pancoast was heard. He ceased a moment, and then continued: "It is an advance in medical science, because it gives antagonism to allopathy, and this antagonism has made you better to-day than you have ever been before." After the speech Prof. Pancoast rose and said he would have to take issue with Col. McClure on one point, "in that we were not allopaths, but simply regular physicians; others may call themselves homœopaths, electropaths, etc., but we do not need anything but M.D."—*Ledger.*

A LONDON druggist has been convicted and fined for dispensing a cough medicine containing morphine, without a poison label. The value of a child's life, in England, appears to be small, as this fine only amounted to $2.50.

THE CITY'S HEALTH.—For the week ending April 5, the following interments were reported:

Phthisis	59
Pneumonia	37
Heart disease	33
Inflammation of brain	16
Convulsions	14
Old age	13
Typhoid fever	12
Paralysis	11
Inanition	10
Bronchitis	10
From all causes	390
Respiratory	130
Circulatory	50
Constitutional	44
Genito-urinary	16
Gastro-intestinal	34
Microbic	159
Nervous	61

There has been a marked decrease in the number of deaths, those for the preceding week aggregating 438. The mortality from pneumonia and from heart disease still continues abnormally high; typhoid fever continues at about the same figure, disregarding the recent rains, which must have either washed a large amount of impurity into the river, or washed it out again.

NEW GRADUATES:

Kansas City Homœopathic	Graduates,	6
St. Louis Coll., P. & S.	"	56
Drake University, Iowa	"	7
Arkansas Industrial University	"	16
Louisville Med. College	"	117
Charleston Med. College	"	23
Southern Med. College, Ga	"	40
N. Y. Eclectic Med. College	"	12
Chattanooga Med. College	"	5
Georgia University	"	40
Michigan Coll. Med. and Surgery	"	18
University of Nashville	"	138
Kansas City Med. College	"	16
Detroit College of Medicine	"	36
West. Penna. Med. College	"	29

To Contributors and Correspondents.

ALL articles to be published under the head of original matter must be contributed to this journal alone, to insure their acceptance; each article must be accompanied by a note stating the conditions under which the author desires its insertion, and whether he wishes any reprints of the same.

Letters and communications, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication, however. Letters asking for information will be answered privately or through the columns of the journal, according to their nature and the wish of the writers.

The secretaries of the various medical societies will confer a favor by sending us the dates of meetings, orders of exercises, and other matters of special interest connected therewith. Notifications, news, clippings, and marked newspaper items, relating to medical matters, personal, scientific, or public, will be thankfully received and published as space allows.

Address all communications to 1725 Arch Street.

Army, Navy & Marine Hospital Service.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, U. S. Army, from March 23, 1890, to April 5, 1890.

Leave of absence for one month is hereby granted Captain J. O. Skinner, Assistant-Surgeon (Fort Ontario, N. Y.), the leave to commence forthwith, as his services may be required with troops to change station early in May. Par. 5, S. O. 75, Div. of the Atlantic, April 2, 1890.

By direction of the Secretary of War, a board of medical officers, to consist of Colonel Edward P. Vollum, Surgeon; Major George M. Sternberg, Surgeon; Major Henry McElderry, Surgeon, and Captain John Cochran, Assistant-Surgeon, is constituted, to meet in New York City on the 28th day of April, 1890, or as soon thereafter as practicable, for the examination of Asistant-Surgeons for promotion, and of candidates for admission iuto the Medical Corps of the Army. The Board will be governed in its proceedings by such instructions as it may receive from the Surgeon-General. S. O. 78, par. 6, A. G. O., April 3, 1890.

The leave of absence for one month, granted Captain Marcus E. Taylor, Assistant-Surgeon, by paragraph 3, S. O. 26, C. S., Headquarters Dept. of the Columbia, is hereby extended one month, on surgeon's certificate of disability. Par. 1, S. O. 19, Division of the Pacific, March 27, 1890.

By direction of the Secretary of War, leave of absence for two months, to take effect on or about April 15, 1890, is granted First Lieutenant Charles F. Mason, Assistant Surgeon. Par. 3, S. O. 76, A. G. O., Washington, April 1, 1890.

By direction of the Secretary of War, Captain Henry P. Birmingham, Assistant-Surgeon, is relieved from station at Fort Klamath, Oregon, and from temporary duty at Vancouver Barracks, Washington, and will report in person to the commanding officer, Boise Barracks, Idaho, for duty at that post. Par. 6, S. O. 72, A. G. O., Washington, D. C., March 27, 1890.

Changes in the Medical Corps of the U. S. Navy for the two weeks ending April 4, 1890.

AMES, H. E., Passed Assistant-Surgeon. Ordered to Museum of Hygiene, Washington, D.C.

FEREBEE, N. McP., Surgeon. Ordered to the U. S. S. "Essex."

ANDERSON, FRANK, Passed Assistant-Surgeon. Detached from the U. S. S. "Dolphin," and ordered home.

GRIFFITH, S. H., Passed Assistant-Surgeon. Detached from Museum of Hygiene, and ordered to the U. S. S. "Dolphin."

HEFFENGER, A. C., Passed Assistant-Surgeon. Ordered to temporary duty at Navy Yard, Portsmouth, N. H.

SIMONS, MANLY H., Surgeon. Ordered to superintend repairs at Widows' Island Hospital, in addition to present duties.

Official List of Changes of Stations and Duties of Medical Officers of the U.S. Marine Hospital Service for the two weeks ending April 5, 1890.

BAILHACHE, P. H., Surgeon. To represent M. H. S. at meeting of California State Board of Health. April 4, 1890.

WYMAN, WALTER, Surgeon. To proceed to Wilmington, Del., on special duty. March 27, 1890.

CARRINGTON, P. M., Passed Assistant-Surgeon. Granted leave of absence for thirty days, on account of sickness. March 28, 1890.

PETTUS, W. J., Passed Assistant-Surgeon. Granted leave of absence for sixty days, with permission to go abroad. April 2, 1890.

HEATH, F. C., Assistant-Surgeon. To rejoin station, Detroit, when relieved at Cleveland. April 3, 1890.

KINYOUN, J. J., Assistant-Surgeon. To proceed to Wilmington, Del., on special duty. March 28, 1890.

STONER, J. B., Assistant-Surgeon. Relieved from special duty on floating hospital "Stevens;" ordered to assume command of the service at Pittsburg, Pa. March 24 and April 4, 1890.

CONDICT, A. W., Assistant-Surgeon. To proceed to Cleveland, Ohio, for temporary duty. April 2, 1890.

GUITERAS, G. M., Assistant-Surgeon. When relieved at Pittsburg, Pa., to proceed to Marine Hospital, New York, N. Y., for duty. April 3, 1890.

(Omitted from previous report.)

PETTUS, W. J., Passed Assistant-Surgeon. Promoted and commissioned Passed Assistant-Surgeon by the President. February 26, 1890.

Medical Index.

A weekly list of the more important and practical articles appearing in the contemporary foreign and domestic medical journals.

Adenoid vegetation of naso-pharynx, Renner. Buf. Med. and Surg. Journal.
Abdominal sections, one hundred and sixty, Mann. *Ibid.*
Aneurism of femoral artery, French. St. Louis Clin., March, '90.
Acute purulent inflammation of middle-ear, Donnelly. Northwestern Lancet, March 15, 1890.
Abortion, treatment of, Thomas. Ann. Gyn. and Pæd., March.
Adherent vesical calculus in a child, Vargas. Arch. of Pediat.
Ametropiæ and insufficiencies of recti, Wright. Journal of Amer. Med. Assoc'n.
Anæsthetics, relative value of, Stockwell. Med. Age, March, '90.
Accidental separation of symphysis pubis during labor. McNaughton, Brooklyn Med. Journal, April, 1890.
Arrest of immature cataract, Kalish. Med. Rec., March 29, '90.
Angeborne Spalten des Ohrlappchens, Israel. Archiv für Path. Anat. und Phys., 4 Feb., 1890.
Abweichungen vom Physiologischen, Glogner. *Ibid.*
Asymmetrische Zelltheil. in Epithelkrebsen, Hausemann. *Ib.*
Atlasankylose und Epilepsie, Sommer. *Ibid.*
Adénie et leucocythemie, Gaboriand. Gaz. Med. de Nantes.
Aortic aneurism, autopsy, Suzuki. Sei-I-Kwai Med. Jour., Jan.
Appareils nouveaux destines au traitement de la phtisis pulmonaire, Ley. Bull. Gen. Ther., 15 Mars, 1890.
Action analgesique de la exalgine, Fraser. *Ibid.*
Angor pectoris et angor laryngis, Coupard. La Trib. Med.
Ætiologie der Cholera Asiatica, Hueppe. Prag. Med. Wochen.
Albuminuria in the apparently healthy, Washburn Med. News.
Aristol in Psoriasis, Schirren. Berl. Klin. Woch., 17 März, '90.
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Bacilli tuberculosis, Jepson. Omaha Clinic, March, 1890.
Congenital dislocation of shoulder, Scudder. Archives of Ped.
Central abscess of brain, Phelps. N.Y. Med. Jour., March 29, '90.
Compound dislocation of ankle-joints, Dennis. Int. Jour. Surg.
Catheterism, Champlin. *Ibid.*, March, 1890.
Cocaine dans les griffes, Dumenil. La Norm. Med., 15 Mars, '90.
Cephalalgies, nevralgies et migraines d'origine nasale, Coupard. La Trib. Med., 20 Mars, 1890.
Corporeal endometritis, Godfrey. The Med. Bulletin, April, '90.
Cystitis in the male, Yandell. Am. Pract. and News, March.
Creosote in phthisis, Benedict. N.E. Med. Monthly, April, '90.
Corpus luteum in non-pregnant women, Hirst. Med. News.
Criticism of the Wiegert hot air treatment of pulmonary tuberculosis, Cary. Brooklyn Med. Jour., April, 1890.
Carcinoma of breast, stricture of urethra, and stone in the bladder, Pilcher. *Ibid.*
Disease germs and disinfectants, Johnson. *Ibid.*
Diabetes mellitus, Kalley. Mineral Waters, March, 1890.
Danger of syphilitic infection by gynæcologists, Goodell. Annals of Gynæ. and Pæd., March, 1890.
Disinficirende Mittel u. Methoden, Geppert. Berl. Klin. Woch.
Dei doveri dei medico, Ruata. La Sal. Pub., 15 Feb., 1890.
Des formes nerveuses de la grippe, Revilloid. Revue Med.
Degeneration of uterine fibroids, Cushing. Ann. Gyn. and Pæd., March, 1890; Boston Med. and Surg. Jour., April, 1890.
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Erasion in diseases of joints, Willard. Univ. Med. Mag., April.
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Electrolyses endolaryngée, Mermod. Rev. Med., 20 Mars '90.
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Initial eye symptoms in ataxy, Wheelock. Jour. of the Amer. Med. Ass'n., March 29, 1890.
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Injections of mercurial salts in syphilis, Klotz. Jour. of Cut. Genito-Urinary Diseases, April, 1890.
Krebsentwickelung in Lymphdrüsen, Zehnder. Archiv für pathol. Anat. und Phys., 4 Febr., 1890.
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L'estirpazione degli osteo-sarcomi, Bianchi. *Ibid.*
L'emploi de l'air legerement chloroforme, Stackler. Bulletin Gen. Therap., 15 Mars, 1890.
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Monoplegia anæsthetica faciei, Adamkiewicz. Wiener Med. Presse, 16 März, 1890.
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Yellow fever inoculation, Gaston. Jour. of Am. Med. Ass'n.
Zur Pathologie der Influenza, Leyden. Berliner Klin. Woch.
Zwei Fälle von Choreoidalruptur, Pincus. *Ibid*, 10 März, '90.
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